Russell R.A. pinx.
Bartolozzi R.A. sculp.

OBERT JOHN THORNTON, M.D.

Medical Botany.

PRACTICAL BOTANY,

BEING A

NEW ILLUSTRATION

OF THE

GENERA OF PLANTS

CONTAINING

I. Tables to discriminate the Genera;
II. Ditto with the Essential Generic Characters;
III. Origin of the Latin and English Names of each Genus;
IV. All the Natural Characters;
V. The Secondary Characters;
VI. With a Figure, and Dissection of each Genus;

The whole arranged after the Reformed Sexual System.

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BY

ROBERT JOHN THORNTON, M.D.

Member of Trinity College, Cambridge; one of the Council of the London Medical Society; Honorary Member of the Medical and Physical Societies of Guy's Hospital and of Bartholomew's Hospital; Member of several learned Societies and Academies; Lecturer on Medical Botany at the United Hospitals of Guy and St. Thomas; late Physician to the Mary-le-bone General Dispensary; Author of a New Illustration of the Sexual System; the Philosophy of Botany; the Philosophy of Medicine; the Philosophy of Politics; Grammar of Botany; History of Medical Plants, &c.

LONDON:
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1808.

TO

JAMES EDWARD SMITH, M.D. F.R.S.

PRESIDENT OF THE LINNÆAN SOCIETY;
LECTURER ON BOTANY AT THE ROYAL INSTITUTION;
MEMBER OF THE ACADEMIES OF TURIN, UPSAL, STOCKHOLM,
LUND, LISBON, PHILADELPHIA, THE IMPERIAL
ACADEMY, NATURÆ CURIOSORUM, &c.

SIR, *London, October* 1, 1807.

KNOWING how much your delicate mind rejects praise, I shall in this DEDICATION forbear expressing all the sentiments of respect and esteem entertained by me towards one so truly estimable; and indeed it would be a very difficult task for any person to find words sufficiently expressive to give even but a faint likeness of the original, to depict the numerous social and domestic virtues which adorn your character as a man, your liberality as a gentleman, your learning as a scholar, profound judgment, accurate observation, unwearied industry, and most unassuming manners; your perfect knowledge in all the departments of natural history, the numerous discoveries in science you have made, the splendid and useful works you have published, your indefatigable and unabating zeal, the condescension with which you open the invaluable stores of the Linnæan Collection, your instructive and charming manner of lecturing; in short, a thousand perfections would arise in detail to the biographer, and truly proud am I to be able to boast that *such a man* was not only my instructor in botany, but my private friend, and benefactor (having been by him appointed as his successor in the Botanical Chair at *Guy's Hospital*); and in the sincere and ardent prayer that Heaven may long protect such an ornament to society, *so good* and *so great a man*, I have the honor now to conclude the real sentiments of my heart, which, upon such an occasion for taking up my pen, I could not withstand publicly expressing, and have the honor to be,

Dear Sir,

With equal respect, admiration, and regard,

Your obliged, devoted Friend,

ROBERT JOHN THORNTON.

PREFACE.

I SUPPOSE the reader of this work to be already initiated in the fundamental principles of the beautiful science of Botany, as laid down in my "*Philosophy of Botany*," or its abridgment, entitled "*The Grammar of Botany*;" or my "*New Illustration of the Sexual System*;" and having clambered up the hill, which will conduct him to a knowledge of Plants, a delightful view is now presented him, namely, all the *Genera of Plants*, dispersed over the vast surface of the globe.

BOTANY, as a practical science, is of very considerable extent, and demands both *bodily* and *mental* exertion.

It may be objected, as it undoubtedly will, that such *a knowledge* is undeserving the *attention* it requires. I grant that, merely to acquire the names, without, indeed, the attributes, of plants, is an employment rather of a trifling kind; but Botany, considered as *a science*, enlarges greatly our conceptions of the CREATOR, and improves our UNDERSTANDINGS. Are we to be *told*, and *believe*, that the wonderful works of GOD are undeserving the attention of man? That what HE hath contrived with such consummate skill is to be passed over with inattention and disregard? That ignorance is the fit condition of man? That we are to trample over the plants of our country without exercising any curiosity to examine into their nature and fabrication?—I will not go so far as to call this language direct impiety against the CREATOR, who has kindly placed us in this world, and presented us with suitable objects for our admiration, contemplation, and benefit; but I will be bold to assert, that such pleaders for *ignorance* are generally the misemployers of their own time, or of so low a cast of mind, as always to envy and speak against those acquisitions they do not themselves possess.

"That existence," says Linnæus, "is surely *contemptible*, which regards only the gratification of instinctive wants, and the preservation of a body made to perish. Superior to the brute beast, *Man* is formed to contemplate the *great Book of Nature*, and behold with wonder and adoration the stupendous works of HIM, who created both *these* and *us*."

There are, thanks be to GOD! on the other hand, a multitude of *superior spirits*; for only look into your own breast, and you will find there are persons born, not to consume the fruits of the earth (*"fruges consumere nati"*) and nothing further, but who delight in every laudable acquisition. These are the true prototypes of the infinitely wise CREATOR. Instead of possessing a few confined ideas, their minds range over the varied forms of creative power, and stored with many branches of genuine science they appear truly beings, only a little lower than the Angels, and can look up as *men* with proper gratitude to that BEING, whose goodness, power, and excellence, they have seen and felt.

Nor does the advantages of the study of BOTANY rest only in exalting our conceptions of the DEITY. "Who-ever," says an ingenious writer,* "has turned his mind so as to comprehend the extensive system of the vegetable kingdom, in the manner as at present taught, and has traced this system through its various connexions and relations, either descending from generals to particulars, or ascending by a gradual progress from individuals to classes, till it embraces the whole vegetable world, will, by the mere exercise of the faculties employed for this purpose, acquire an habit of arrangement, a perception of order, of distinction, and subordination, which it is not perhaps in the nature of any other study so effectually to bestow. In this view the examination of the vegetable kingdom seems peculiarly proper for *youth*, to whose unperverted minds the study of natural objects is always an interesting occupation, and who will not only find in this employment an innocent and an healthful amusement, but will familiarize themselves to that regulated train of ideas, that perception of relation between parts and the whole, which is of *use* not only in every other department of natural knowledge, but in all the concerns of life."

"Independent too of the habits of order and arrangement which will thus be established, it may justly be observed, that the bodily senses are highly improved by that accuracy and observation, which are necessary to discriminate the various objects that pass in review before them. This improvement may be carried to a degree, of which those who are inattentive to it have no idea. The *sight* of Linnæus was so penetrating, that he is said never to have used a glass, even in his minutest inquiries. But our own neighbourhood affords a striking instance of an individual,* who, although wholly deprived of sight, has improved his other senses, his touch, his smell, and his taste, to such a degree, as to distinguish all the native plants of this country, with an accuracy not attained by many of those who have the advantages of sight, and which justly entitles him to rank with the first botanists of this kingdom."

---

* Roscoe, of Liverpool.

Independent of the propriety of MAN admiring the wonderful works of the beneficent CREATOR, and of the advantages resulting to the individual, who attaches himself to this study, as enlarging the understanding, and rendering his mind more orderly in every concern of life, and his senses more acute, he will find that there results also from the Pursuit of Botany the most *heartfelt satisfaction.*

"Avoiding mankind," says the immortal *Rousseau*, "seeking solitude, no longer under the dominion of fancy, and indisposed towards laborious reflection, possessing, nevertheless, a lively temperament, which would not allow me to sink into a melancholy indifference, I began to consider those objects of nature which encompassed me, and the choice fell to the study of Botany, for the following reasons.

"The *Mineral Kingdom* presented to me nothing in itself that was lovely or attractive. Its riches, which are inclosed in the bowels of the earth, seemed, as if buried there, not to excite the avarice of mankind. To profit from this study it demanded that I should be a *Chemist,* and make the most painful and expensive experiments, work in laboratories, expend much money and time, in coals, furnices, crucibles, retorts, amidst smoke, and *stifling* vapours, always at the *expense* of health, and oftentimes at the *hazard* of life.

---

* Mr. Gough, of Kendal.

"The *Animal Kingdom* is much more within our reach, and certainly merits our regard: nevertheless, has not this study its difficulties, its embarrassments, its expences, and its disgusts? How are we to observe, dissect, study, know, the birds flying in the air, the fishes swimming in the waters, the quadrupeds avoiding our pursuits as swift as the wind, or capable of resistance, and not more disposed to offer themselves for my observations, than I to run after them, in order that I might possess the pleasure of examining them. Am I to pass a great part of my life in being put out of breath by running after butterflies, impaling of little insects which I may have entangled, and in the examination of snails and worms? This study also requires a knowledge of *Anatomy*. By this alone we are enabled to class animals, and distinguish the different genera. We must therefore study animals dead, dissect them, skeletonize them, and rake, at leisure, their palpitating vitals. What a frightful apparatus is required for an anatomical theatre! It is not, upon my honour, in such a place that *John Baptiste Rousseau* will seek his instructions: and to study the manners and dispositions of animals requires the game-keeper, the fisherman, and fowler, and the expense of a vast menagerie, where animals must undergo a deprivation of *liberty*, be confined in narrow cages, and exhibit the frightful images of constraint, ennui, inquietude, slavery, and torture, which no private advantages can justify.

"*Brilliant flowers!* the enamel of the meadows: ye refreshing shades, rivers, bowers, verdure! come purify my imagination, already polluted by such an *hideous idea.* My soul, dead to all the great movements in life, can only be affected by *innocent* scenes; from its sensibility, alone can be derived to it either pleasure or pain. Attracted by *flowers,* which present themselves on every side, I observe, I contemplate them, I compare them, in a word, I class them; and I become so far a *Botanist* as one would wish, who studies Nature, so as to derive from this pursuit an unceasing *satisfaction* or *contentment.* To attain this knowledge I have no expensive works to purchase, nor the trouble of diving into abstruse commentators; the book presented me by Nature is quite sufficient, and without errata. I pass over it with ease from herb to herb, from plant to plant, to compare their different characters, to remark their agreements and disagreements, in short to examine their respective structures, to search into their laws, the reason, and the end, of these animated machines—to give myself up to the charms of unceasing admiration and gratitude towards that BEING, who hath granted me all this indulgence.

"Plants appear to have been profusely scattered over the earth, as the stars in the firmament to invite man, by the attractions of curiosity and pleasure, to their contemplation. But the stars of heaven are placed at a great distance from us. To possess *Astronomy* requires a previous acquaintance with the mathematics, instruments, a long artificial ladder, to bring them within our scope. *Plants,* on the contrary, grow under our very feet, and seem to *invite* our hands; and if the minuteness of their essential parts sometimes evade our sight, the instruments for their examination are comparatively trifling—a needle and a magnifying-glass, or, at most, a pocket microscope, is all the apparatus required.

“ The *Botanist* at every walk pleasantly glides from object to object; each flower he examines excites in him curiosity and interest, and as soon as he comprehends the manner of its structure, and the rank it holds in a system, he enjoys an unalloyed pleasure, not less vivid, because it costs him no great expense or trouble. In this occupation it is that the violent passions are lulled into a dead calm, and only so much of emotion is produced as is sufficient to render life happy aud agreeable.

“ All my *Botanical Excursions*,” continues *Rousseau*, “ the several impressions which local objects gave, the ideas which in consequence sprung up, the little incidents which blended into the scene, all these have produced a delightful impression, which the sight of my *herbarium* at once rekindles. Although I may never again revisit that beautiful country, those dark forests, those crystal lakes, those hanging woods, those rugged rocks, those lofty mountains, whose sight so often captivated my heart; although these happy scenes are closed upon me for ever, yet am I transported back to them whenever I review the *herbarium* I possess. The little fragments of those plants I collected are of themselves sufficient to recal the whole of this magnificent spectacle. This *herbarium* of mine recommences for me a journey of delight, and, as a camera obscura, repaints all this scenery again to my view. It is this association which makes *Botany* so charming; it recals back to the imagination all those ideas which afford the truest pleasure. Meadows, water, woods, solitude, the *inward contentment*, which alone dwells among such objects, are incessantly brought forward to the memory.

It alone can obliterate from my recollection the persecutions I have experienced from mankind in general, their malicious contempts, their avowed hatred, their gross insults, and all the many bad returns made for my open and sincere attachment towards them. It at once transports me among habitations of peaceable beings, simple and kind, such as I should wish to pass my days with. It recalls back my infant hours, my innocent pleasures, and compels me to forget every unhappiness."

I have thought it right to make the student's first step in *practical Botany,* the knowledge of those plants, which are the produce of our own climate; for it seemed to me highly reasonable to become *first* acquainted with *Indigenous plants* before we cultivate *Exotic Botany.*

" A knowledge of *the plants of our own country,*" says the learned, and illustrious, Dr. *Smith,* in his *English Botany,* " is in many respects even preferable to that of *exotics,* as it can be more readily and completely attained, and is on several accounts more directly useful.

" There is no occasion to mention the indispensable necessity of such knowledge to those who are occupied with the rural economy of the country, to be well acquainted with its native vegetables; or to such who cultivate the healing art.

" Nor are the humble productions of our fields and woods deficient in real beauty, elegance, and singularity of structure; in which respect some of them even vie with the more favourite flowers from abroad.

" The study of *Indigenous plants* as an amusement, has this eminent advantage over *Exotic* botany,—that these are always found in their natural state of growth, and that they double the pleasure of every walk and journey, and call forth to *healthy exercise* the *bodily* as well as *mental powers*; whilst the person, who has not a relish for such pursuit, must submit to take a walk in the country, without an object, and usually without enjoyment, merely for the purpose of exercise, and that alone; or toil in some dangerous sports; or sacrifice health to some sedentary employment."

What a happy change would be at once effected in our *Seminaries*, were this science universally taught, whereby each excursion in the fields, to *boys*, and even *females*,* would be then attended with instruction and delight, the limbs rendered more agile, the constitution more ensured, where learning would be a recreation, emulation kindled, and the mind, comprehending a *palpable* science, would be thereby fitted for *higher flights*, in which the memory would be strengthened, the judgment increased, and the active powers of the understanding sharpened!

I trust and hope that the time is not far distant, when *such knowledge* will become *universal*, and it will be thought as disreputable, not to know *scientifically* the plants of *our* country, which every day and hour present themselves to our view, as not to be able, when called upon, to construe a crabbed passage of a Greek or Roman poet, translate a French author, or even dance.

Without further apology I shall enter upon the object of this work.

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* A *System*, in my opinion, superior in *theory*, and nearly equal in *practice*, to the *Sexual System*, might be prepared for *young ladies*, without the least reference to the *Sexes in Plants*, if any objection should be started on this subject by *delicate minds*; and indeed, had I been left to pursue *my own choice*, I should have preferred arranging the *Genera of Plants* under a system I once contrived, A COMPOUND SYSTEM; *mostly* NATURAL, *partly* ARTIFICIAL: but the *fashion of the times* is now too strongly established to allow of any other than A SEXUAL SYSTEM.

THE REFORMED SEXUAL SYSTEM.

Desine quapropter *novitate* exterritus *ipsa*
Expuere *rationem:* sed magis acri
Judicio perpende, et si tibi *vera* videtur
Dede manus.
LUCRET.

CLASSES.

I.	MONANDRIA	one Stamen.
II.	DIANDRIA	two Stamina.
III.	TRIANDRIA	three Stamina.
IV.	TETRANDRIA	four Stamina.
V.	PENTANDRIA	five Stamina.
VI.	HEXANDRIA	six Stamina.
VII.	HEPTANDRIA	seven Stamina.
VIII.	OCTANDRIA	eight Stamina.
IX.	ENNEANDRIA	nine Stamina.
X.	DECANDRIA	ten Stamina.
XI.	DODECANDRIA	12 to 19 Stamina.
XII.	POLYANDRIA	20 or more Stamina.
XIII.	CRYPTOGAMIA	concealed Stamina.

ORDERS.

I. *Orders taken from the Number of Pistilla*

I.	*Monogynia*	one Pistillum.
II.	*Digynia*	two Pistilla.
III.	*Trigynia*	three Pistilla.
IV.	*Tetragynia*	four Pistilla.
V.	*Pentagynia*	five Pistilla.
VI.	*Hexagynia*	six Pistilla.
VII.	*Heptagynia*	seven Pistilla.
VIII.	*Octogynia*	eight Pistilla.
IX.	*Enneagynia*	nine Pistilla.
X.	*Decagynia*	ten Pistilla.
XI.	*Dodecagynia*	12 to 19 Pistilla.
XII.	*Polygynia*	20 or more Pistilla.

II. *Orders taken from some curious particularity in the Stamina.*

XIII.	*Didynamia*	four Stamina, two long, two short.
XIV.	*Tetradynamia*	six Stamina, four long, two short.
XV.	*Icosandria*	twenty or more Stamina, inserted on the Calyx or Corolla.
XVI.	*Monadelphia*	filaments united in one body.
XVII.	*Diadelphia*	filaments united, forming two bodies
XVIII.	*Polyadelphia*	filaments united, forming three, or more bodies.
XIX.	*Syngenesia*	five anthers united.
XX.	*Gynandria*	Stamina arising from the Pistil.
XXI.	*Monœcia*	Stamina apart from the Pistil on the same Plant.
XXII.	*Diœcia*	Stamina apart from the Pistil on different Plants.
XXIII.	*Polygamia*	bisexual flowers, and unisexual.

Class CRYPTOGAMIA has the natural Orders,

I. *Filices.* II. *Musci.* III. *Algæ.* IV. *Fungi.*

IT is certainly not a small satisfaction for me to find, that although the learned and venerable Professor MARTYN has long openly disapproved of the *changes* made in the Sexual System by the several Reformers, yet he writes to me,—

Extract of a Letter to Dr. Thornton from the Rev. Mr. Martyn.

"I by no means *disapprove* of *your new* attempt to render the Sexual System, by the manner in which you have done it, an *easier medium* of attaining a *knowledge of Plants*; and have been long convinced in my own mind, that we strive in vain to unite a *natural* with an *artificial arrangement*. Upon *your plan*, I see *no impropriety* in bringing the ORCHIDEÆ into the *Second Class*; nor can I even *object* to your *altering*, as you have done, the separate classes of Linnæus, ICOSANDRIA and POLYANDRIA. Your *method* is ably considered throughout; for along with *you* I hold our great Master's System as *sacred*, and can never approve of those *greater alterations*" (he might have said *mutilations*) "which some of his pupils have made, so differently is to be estimated the conduct of persons engaged in the same object."

The Rev. Dr. Doctor MILNE, the learned anthor of "*A Botanical Dictionary*," writes to me,

Extract of a letter to Dr. Thornton from the Rev. Dr. Colin Milne.

"Your *Reformed Scheme* of the *Linnæan System* has my *entire approbation*. It possesses all the admirable and elegant simplicity of RIVINUS, which has always been a great favourite with me, from the steady adherence of the author to the Principles of his method, and is eminently adapted for *practice*. Your ideas respecting the *Sexual System* are truly excellent."

Doctor SHAW, of the British Museum, a gentleman not less eminent as a botanist than a naturalist, declares, "that he believes, had LINNÆUS been alive, the *Reformed Sexual System* would be that which he himself would have instantly adopted." Similar are the opinions also of several other *distinguished botanists*; yet I assure the reader, I mention these high testimonies not with arrogance, but with extreme diffidence.

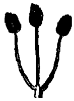
CLASSES of the Reformed Sexual System,
Taken from the Number of Stamina only.

1 Stamen.
(Monandria)

II.

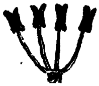
2 Stamina.
(Diandria)

III.



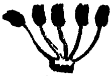
3 Stamina.
(Triandria)

IV.



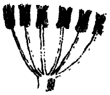
4 Stamina.
of equal length
(Tetandria)

V.



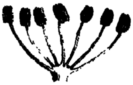
5 Stamina.
(Pentandria)

VI.



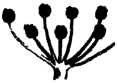
6 Stamina,
equal length
(Hexandria)

VII.



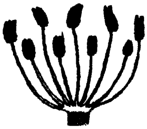
7 Stamina
(Heptandria)

VIII

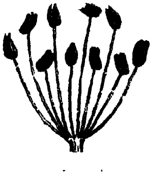


8 Stamina.
(Octandria)

IX.

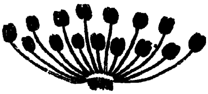


9 Stamina.
(Enneandria)



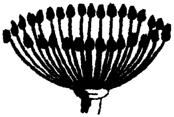
10 Stamina.
(Decandria)

XI.



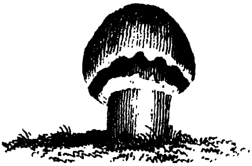
12 to 19 Stamina.
(Dodecandria)

XII.



20 or more Stamina,
arising from the Receptacle.
(Polyandria.)

XIII.



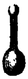
No visible Stamina.
(Cryptogamia)

NB. The Stamina are reckoned by the Number of Anthers

First,
ORDERS, taken from the Number of Pistilla.

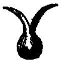
Ordinary Flowers.

I.



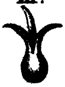
1 Pistillum.
Monogynia)

II.



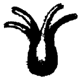
2 Pistilla.
(Digynia)

III.



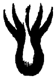
3 Pistilla.
(Trigynia)

IV.



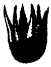
4 Pistilla.
(Tetragynia)

V.



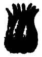
5 Pistilla.
(Pentagynia)

VI.



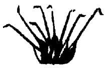
6 Pistilla.
(Hexagynia)

VII.



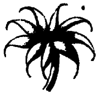
7 Pistilla.
(Heptagynia)

VIII.



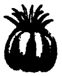
8 Pistilla.
(Octogynia)

IX.



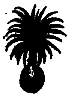
9 Pistilla.
(Enneagynia)

X.



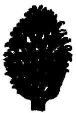
10 Pistilla.
(Decagynia)

XI.



12 to 20 Pistilla.
(Dodecagynia)

XII.



Many Pistilla.
(Polygynia)

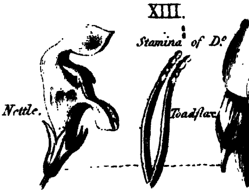
NB. The Pistilla are reckoned by the Number of Styles.

Henderson del. *Mazel sc.*

Secondly
ORDERS derived from certain Peculiarities in the Stamina.

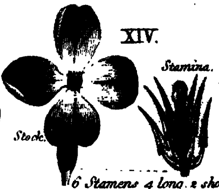
Peculiar Flowers.

XIII.



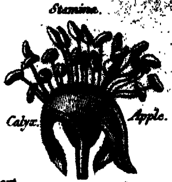
4 *Stamens, 2 long. 2 short.*
(Didynamia)

XIV.



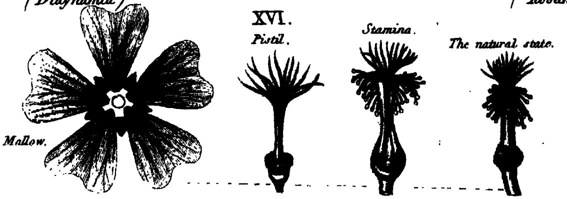
6 Stamens 4 long. 2 short.
(Tetradynamia)

XV.



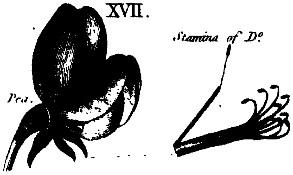
20 or more Stamina inserted into the Calyx or Cor
(Icosandria)

XVI.



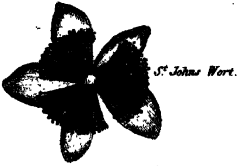
Filaments united in one Body.
(Monadelphia)

XVII.



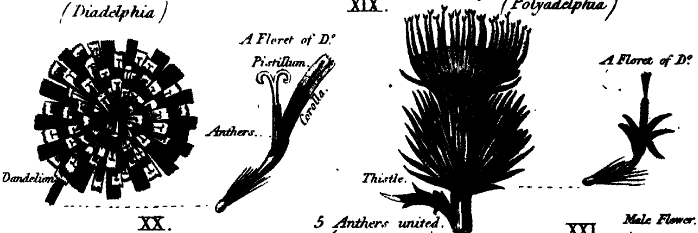
Filaments united in 2 bodies.
(Diadelphia)

XVIII.


S^t Johns Wort.

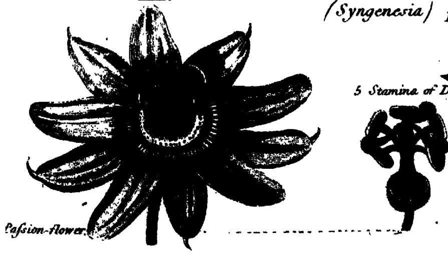
Filaments united in 3 or more bodies.
(Polyadelphia)

XIX.



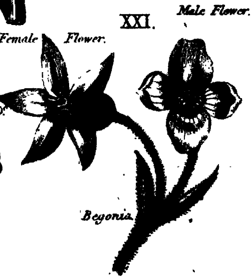
5 Anthers united.
(Syngenesia)

XX.



Stamina arising from the Pistil.
or from a Pillar elevating the same.

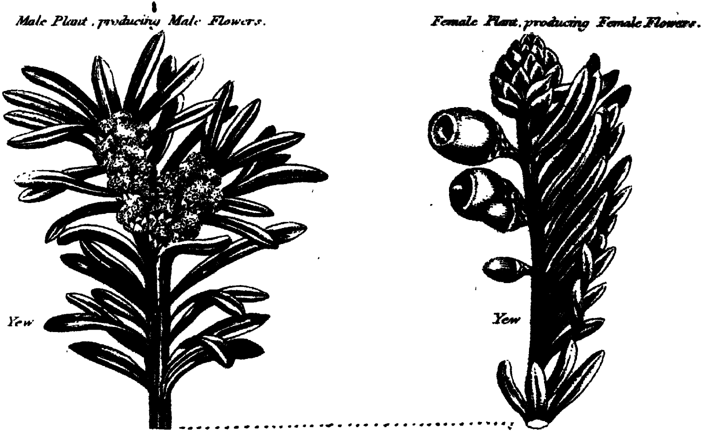
XXI.


Male Flower.
Female Flower.
Begonia.

Male & Female flowers.
growing on the same plant.

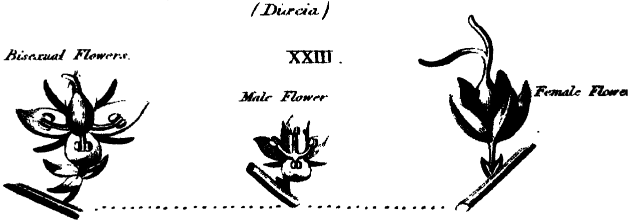
Continuation of Consideration II.

XXII.


Male Plant, producing Male Flowers.
Female Plant, producing Female Flowers.
Yew
Yew

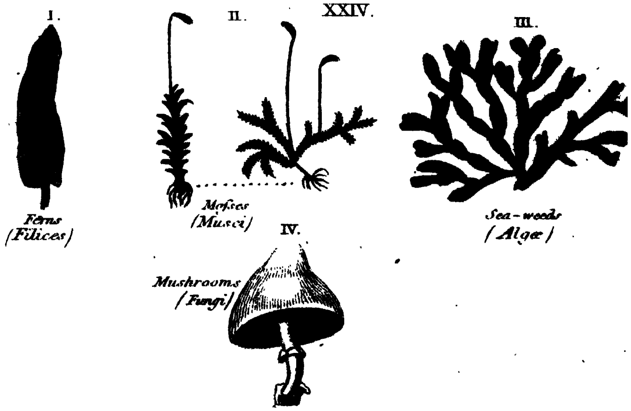
Stamina apart from the Pistil, on different Plants.
(Diœcia)

XXIII.



(Polygamia)

XXIV.



These four last are the orders of

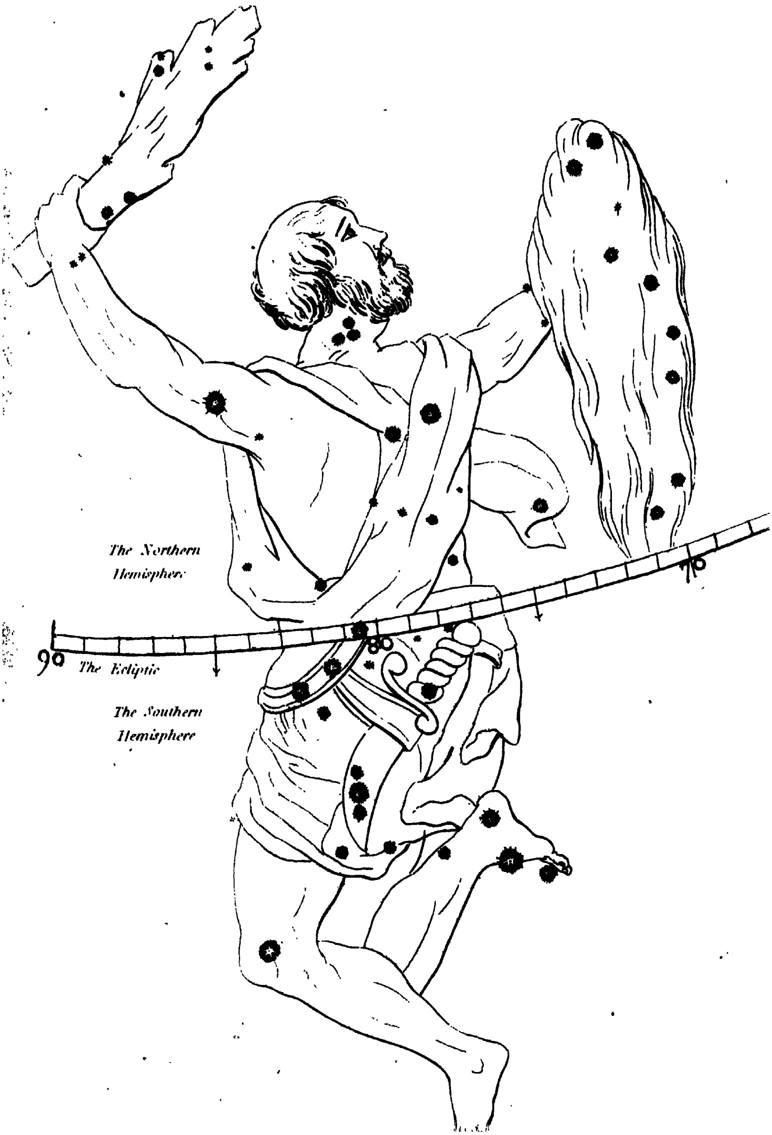
FIRST PART.

PLANTS

OF

GREAT BRITAIN.

The Constellation Orion.



EXPLANATION OF THE WORD GENUS.

Nisi vegetabilia in *Ordines* redigantur, et velut castrorum acies distribuantur in suas *Classes*, omnia fluctuari necesse est. CÆSALPINUS.

THE number of Plants formed by the omnipotent and all-wise CREATOR are so vast, that, without the aid of *method*, the mind of man would be overpowered by this profusion in the bounty of GOD, and he could only imperfectly treasure up in the storehouse of his brain the various beings of the vegetable race. But by the aid of *method* the difficulty arising from *number* is in a great part obviated.

The student, when examining any plant, has to settle, which has been before explained,

1st, THE CLASS,
2dly, THE ORDER,
3dly, THE GENUS;

Which *three advances* in THE SCIENCE OF BOTANY it is the object of the following pages to unfold, in a manner, as it is hoped, will meet with the approbation of the candid and discerning.

Other sciences also have recourse to the aid of art, and as the ladder is contrived to mount up with facility to a great height, so we rise to the acquisition of science step by step.

For example, let us take *Astronomy*, and we shall find that the philosopher has invented two hemispheres, the northern and southern, divided by the ecliptic circle; and the stars are situate in one or the other of these two hemispheres. He next has fancied figures in the heavens, which are called *Constellations*, which mean a cluster or assemblage of certain stars, and this greatly facilitates the acquirement of *Astronomy*. (Vide Plate 1, Introduction.) So the *Botanist* has also his greater divisions, or *Classes*, and smaller divisions, namely, his *Genera*, or assemblages of plants, all which agree in certain characters, and these possess one common appellation; for otherwise the memory must have been overburthened with names.

It is the same as respects the appellation of persons, as the several *Family Names*, and some have, instead of using the term *Genera of Plants*, called these assemblages by the title, "*The Families of Plants.*"

The most common observer has not failed to notice the different sorts or kinds of Roses constituting one *family*; as the common *Dog Rose* of the fields, the garden *Moss Rose*, &c. (Vide Plates 2, 3.)

Thus the several species of *Geraniums* naturally arrange together, constituting one GENUS, (vide Plates 4, 5, 6, 7, 8) all agreeing, if not in the character of the Corolla, in that of *Germen*, which resembles in each a *Crane's-bill*; hence its appellation. (Vide Plate 8.)

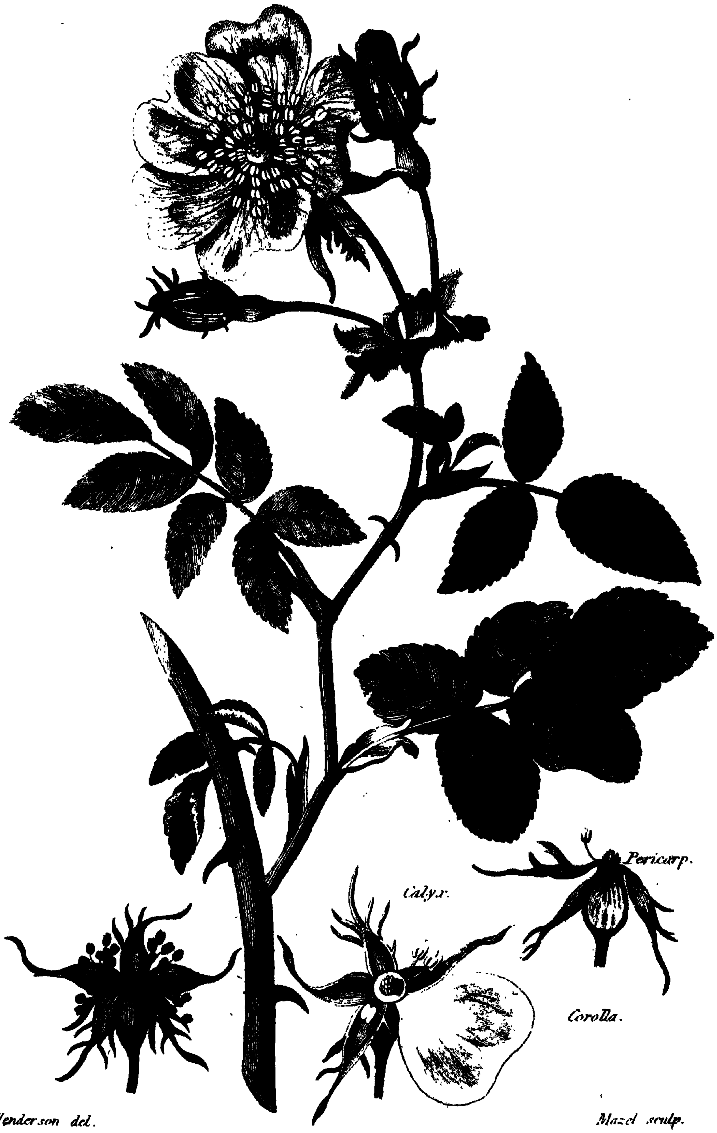
The different sorts of RANUNCULUS all agree in having a *Nectary* at the base of the unguis of the Petal; hence one common appellation, or generic name. (Vide Plates 9, 10.)

The *Pheasant's-eye* ADONIS is not a Ranunculus, as wanting this *generic* character. (Vide Plate 11.)

Thus the several *Passion-flowers* all agree in a curious-formed *Nectary*, and the same classical character; the stamina being five, beneath, and the nectaries in each species being rayed, (vide Plates 12, 13, 14, 15, 16, 17) and each genus, or family, contains a greater or less number of species: thus we have the *Marvel of Peru* (MIRABILIS) varying in the length of the tube, &c. (Vide Plates 18, 19.)

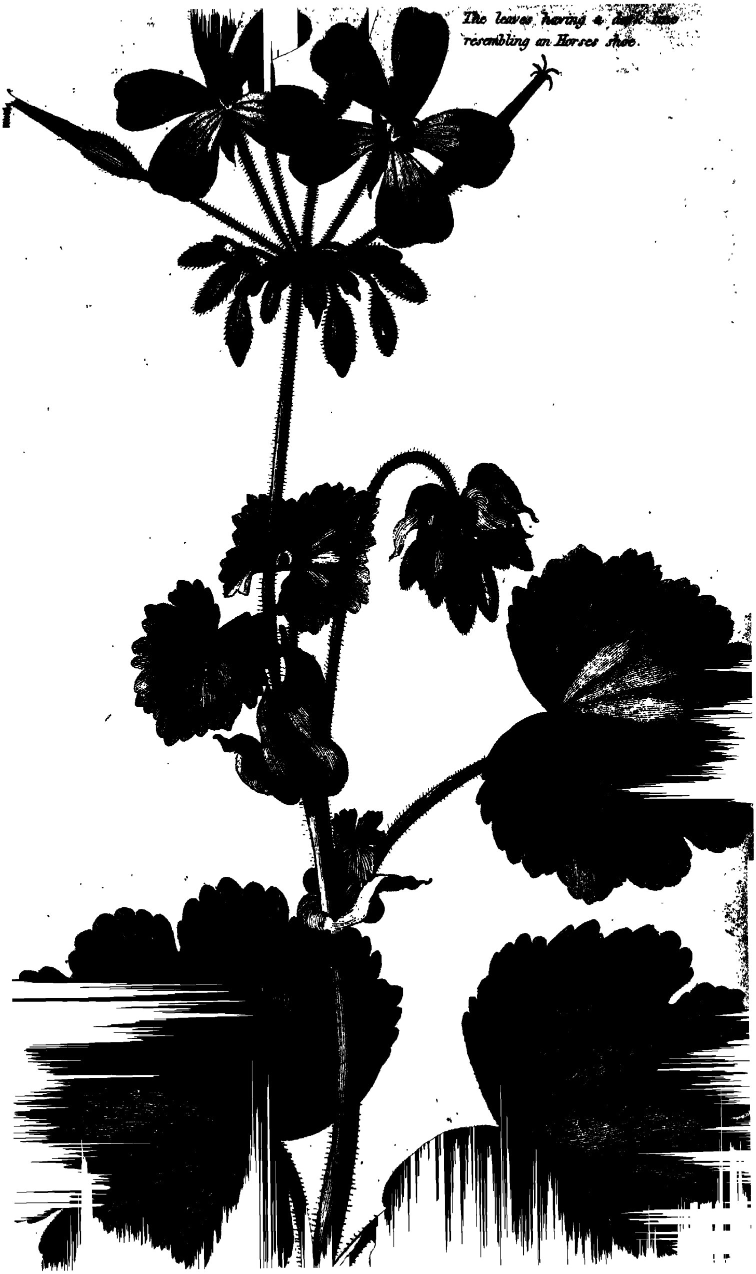
Introd. Pl. 21.

Species 1. Dog Rose.



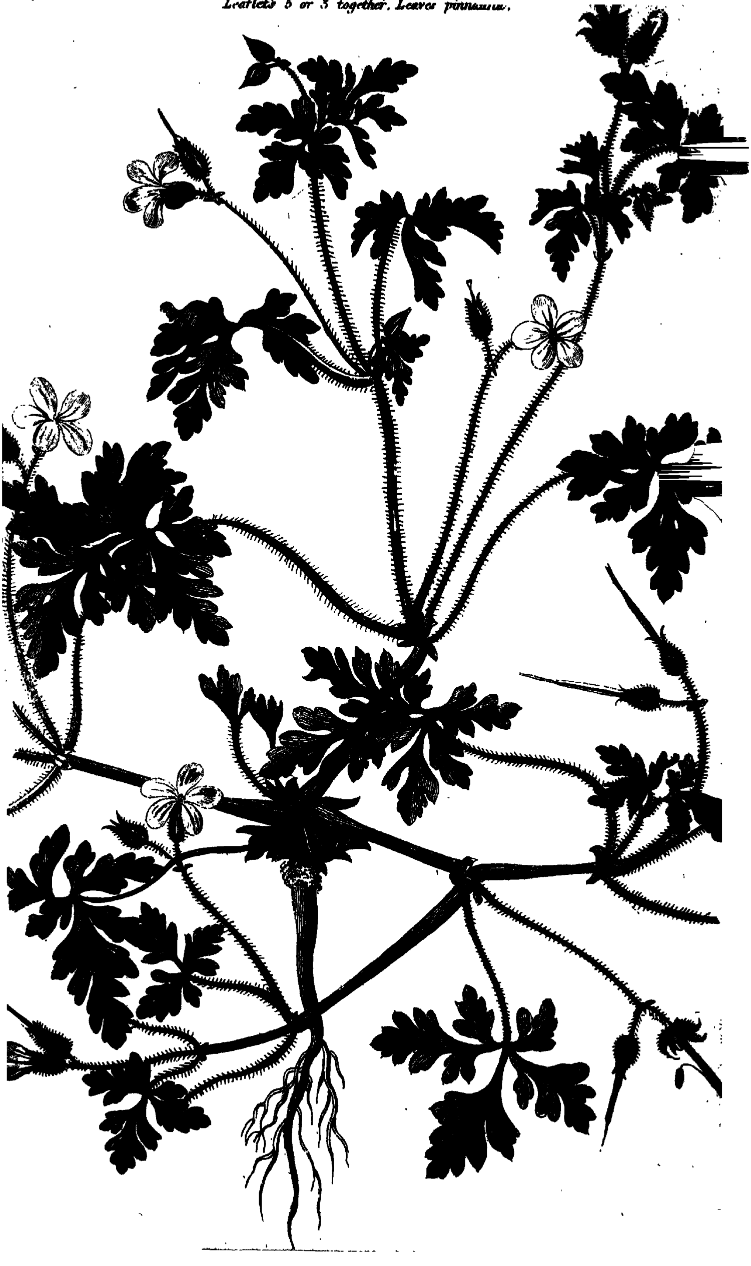
Henderson del.

Mazel sculp.



The leaves having a dark line resembling an Horses shoe.

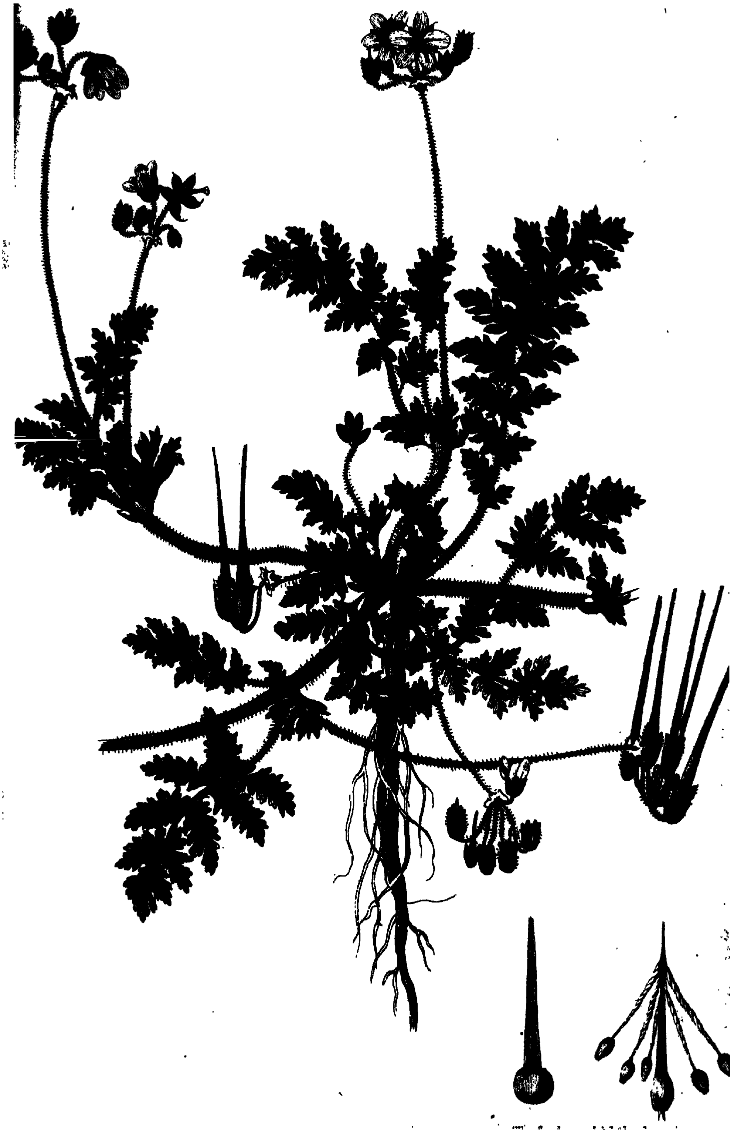
Leaflets 5 or 3 together. Leaves pinnated.

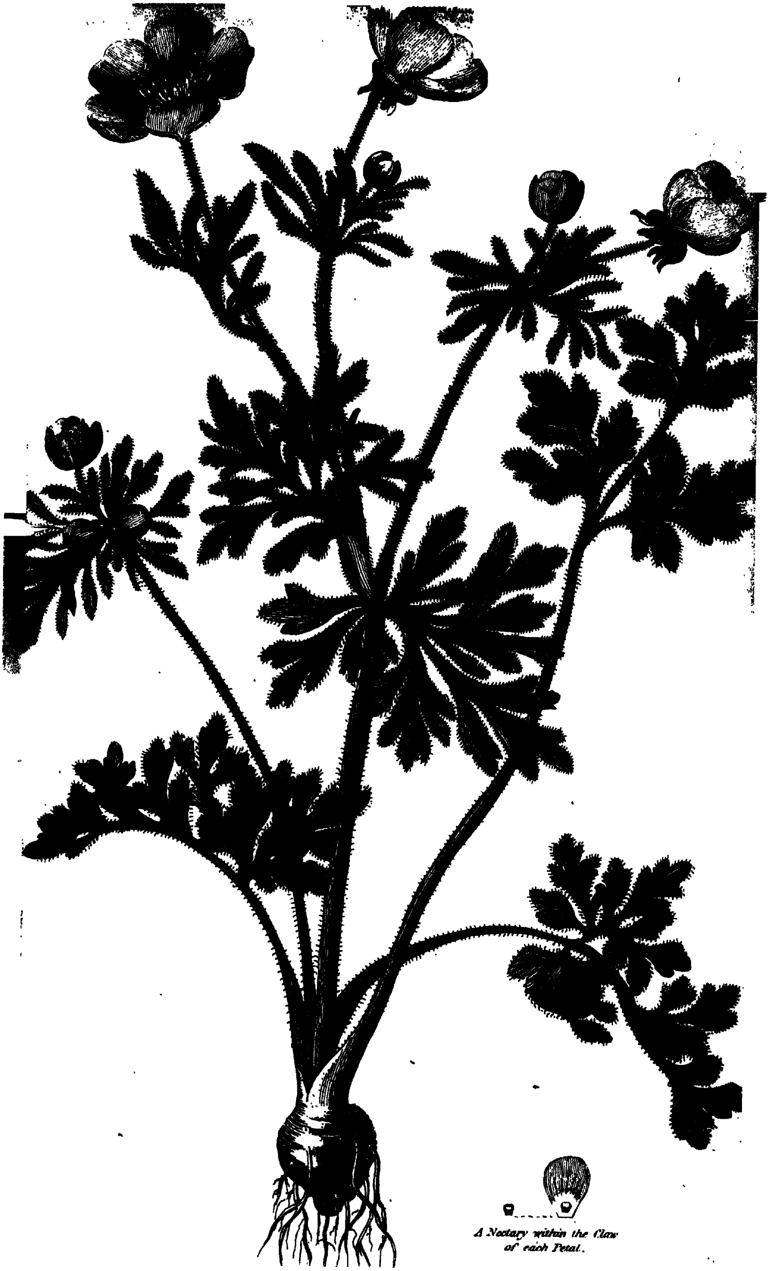


Introd.

Species 5. *Hemlock-leaved* **Geranium.**

Leaves pinnate, incised.

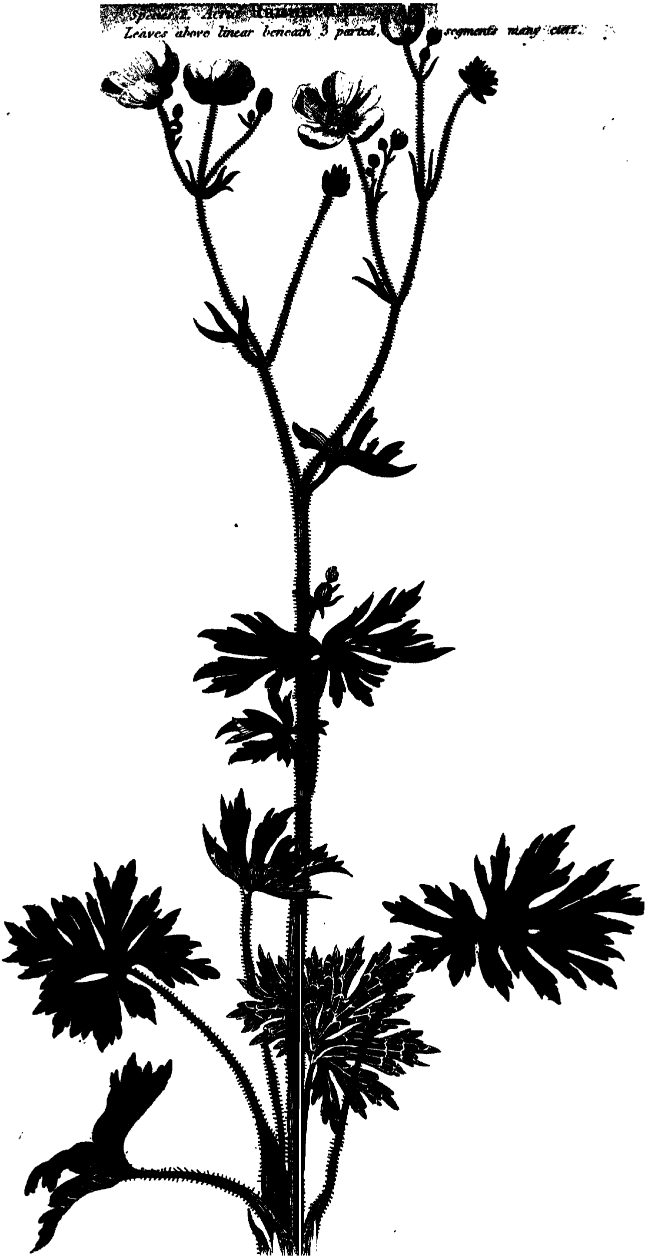


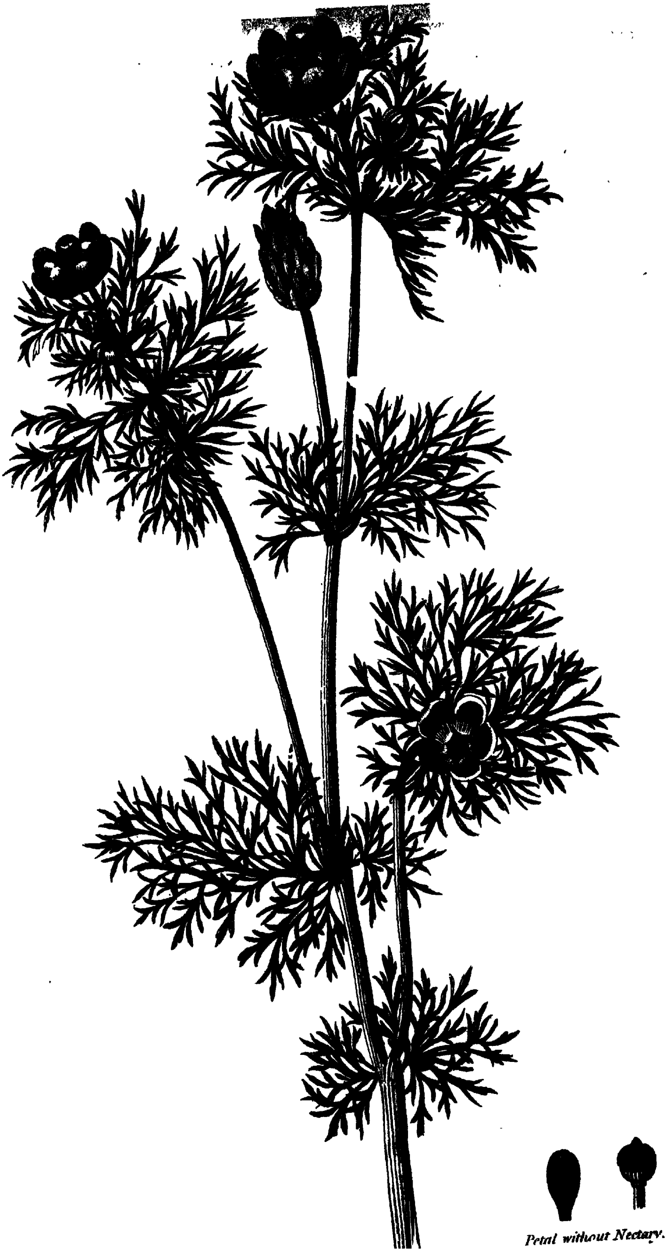


A Nectary within the Claw of each Petal.

Species 2. Acris. [illegible]

Leaves above linear beneath 3 parted, segments many cleft.

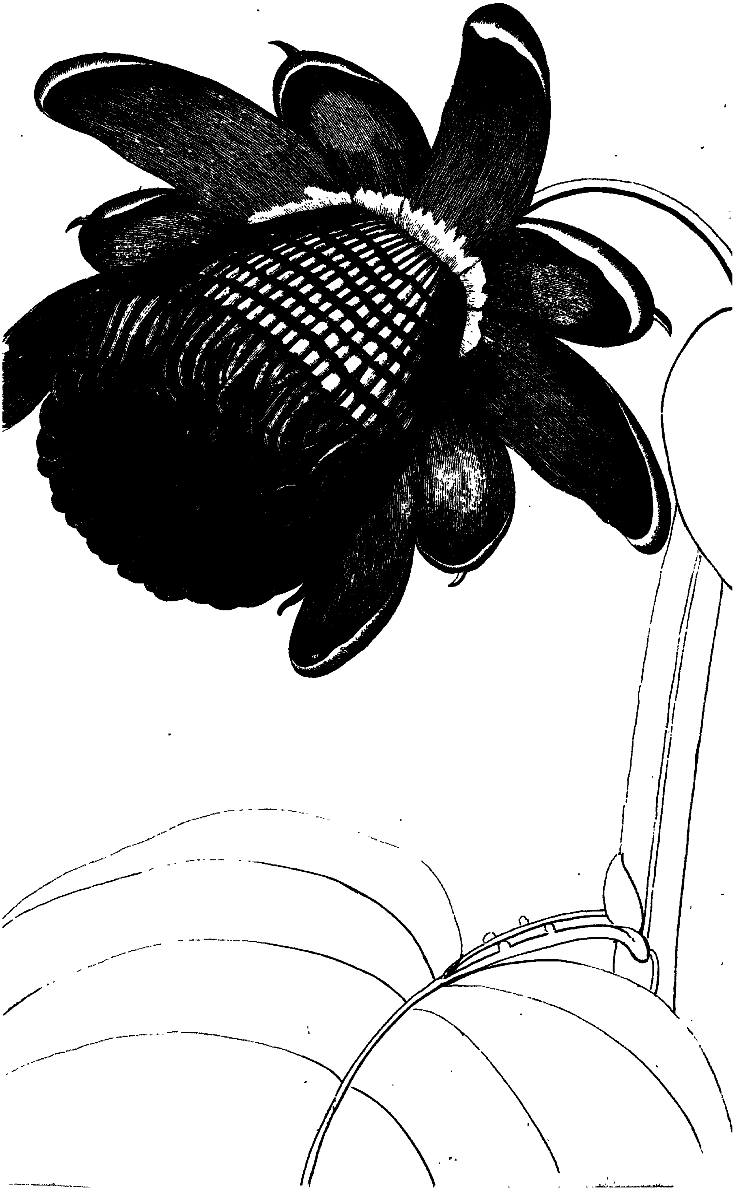


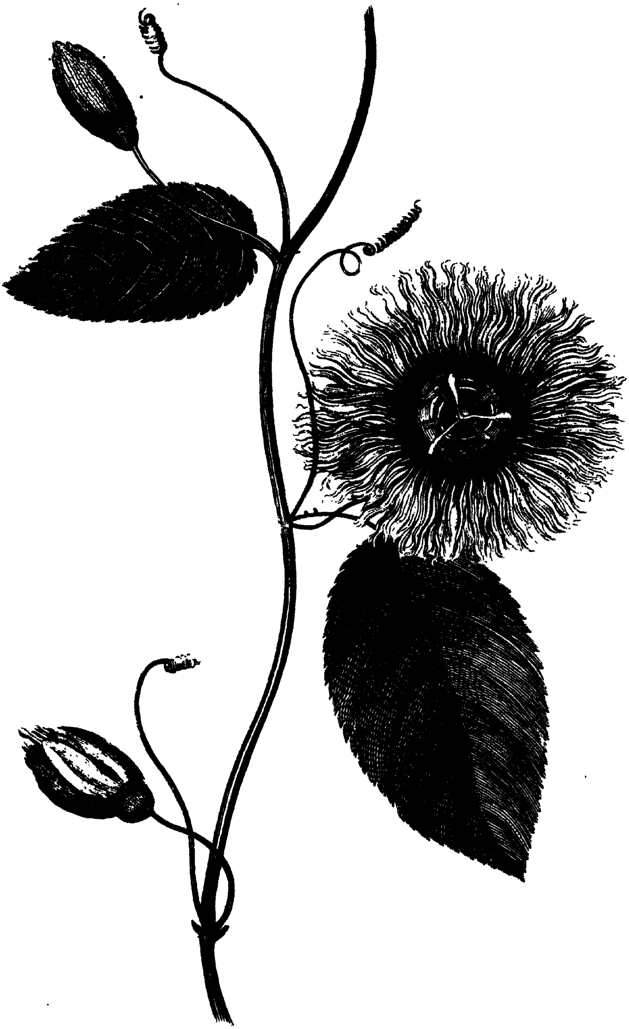


Petal without Nectary.

Passion Flower.

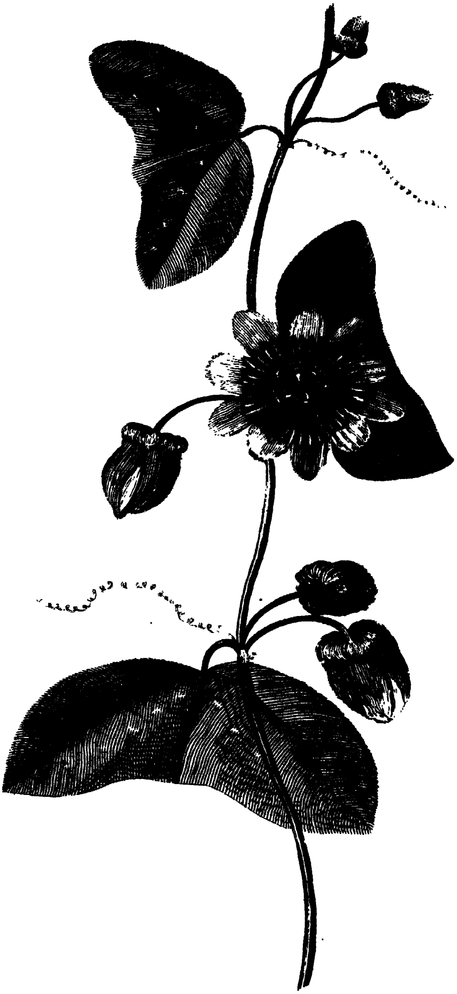
Passion Flower.





Species 4. The Serrated Passion Flower.

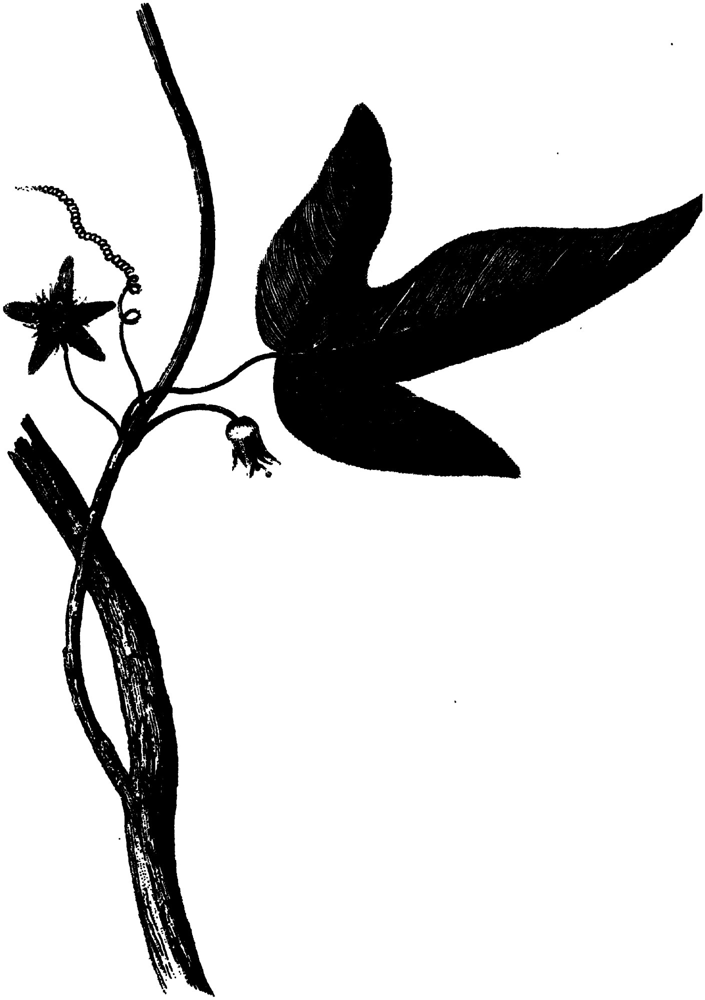
The border of the leaf edged like a saw.



Species 6. The Dotted Passion Flower.

Dots in the leaf.

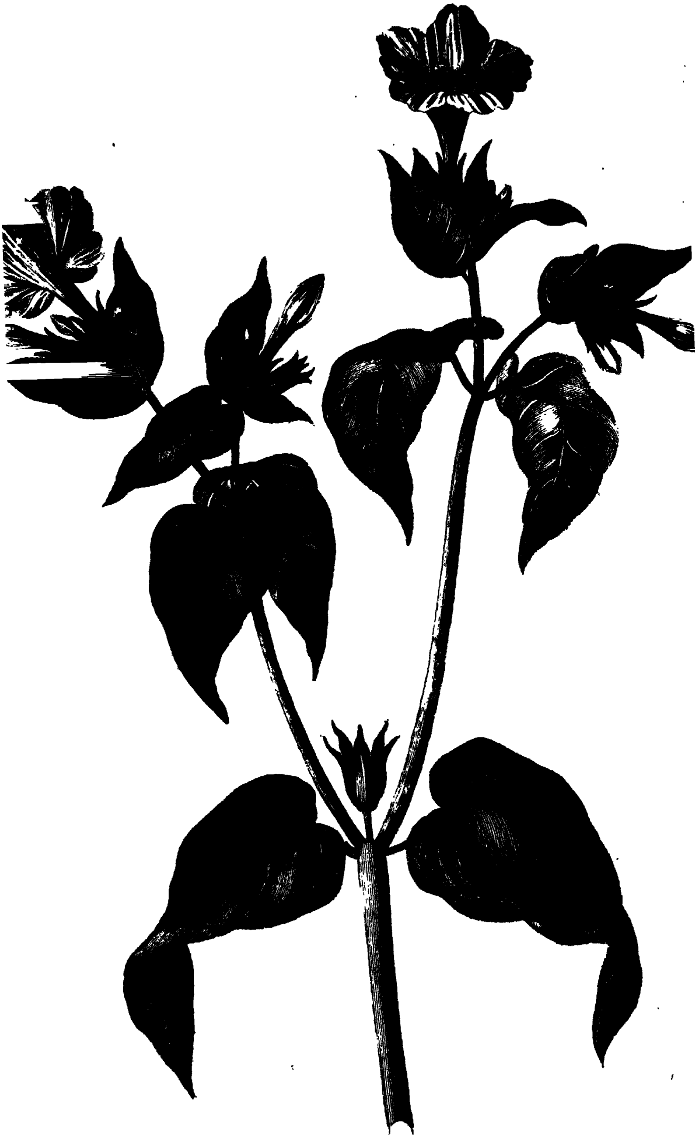
A Passion Flower.



Species 6. *The Cork Passion Flower.*

Stem, actually covered with cork.

Species 1. Jalap **Marvel of Peru.**
Leaves peduncled. Flower having a short tube.



THE FACTITIOUS, ESSENTIAL, NATURAL, AND SECONDARY CHARACTERS.

In our work the reader will meet with four kinds of characters;

I. THE FACTITIOUS CHARACTER,
II. THE ESSENTIAL CHARACTER,
III. THE NATURAL CHARACTER,
IV. THE SECONDARY CHARACTER.

1. The *Factitious Character* is employed in tables to discriminate all the *genera* falling under each particular *Class* and *Order*.

2. The *Essential Generic Character* comprehends all the distinctions requisite to discriminate any *genus* from all other genera in the world. As the multitude of *genera* are great, amounting probably, if we consider the *families of plants* distributed throughout the world, to considerably more than 2000, it became necessary to make *short* distinctions, characteristic of each tribe or *genus*, and to seize upon such peculiarities as are sufficiently striking, and run through each species of the same genus.

The beauty and perfection of these Essential Generic Characters consist in a clear concise discrimination of *each genus*, and, in order to contrast the better these *Essential Generic Characters*, we have included *them* also in *tables*.

These distinctions are frequently very perspicuous, attended with considerable beauty, although founded often upon some very minute consideration.

Thus in our former introductory Plates the *Rose* is discriminated by its *urceolate pericarp,* crowned with a fringed calyx. The *Geraniums* by their *seed-vessel* having the resemblance of a *crane's bill.* The *Ranunculus* by its *scale* at the unguis of each petal of the corolla. The *Passion-flowers* by a radiated nectary, and the *Marvel of Peru* by its funnel-form corolla.

To this we might add the more striking *Generic Essential Character* of the *Monk's-hood,* its pedicelled nectary bearing at the top each of them the form of a *dolphin;*—that of the *Columbine,* whose *nectary* resembles a *nest of doves;*—that of the *Parnassia,* fringed, each hair terminating in a gland (vide Plate 20); that of the *Snow-drop,* resembling three heart-shaped leaves, beautifully marked with green (vide Plate 21); and the many linear petal-like nectary of the *Trollius* (vide Plate 22); and for more minute characters, the small *teeth* running through each species of the genus *Nettle,* by the side of the lower lip (vide Plates 23 and 24); the bifurcation of four filaments in the *Sea Kale* (vide Plate 25).

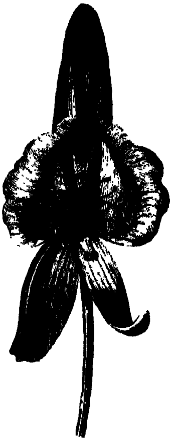
Thus the small hairs on the filaments of the *Spider-wort,* and the crowned germen of the *Poppy,* form their generic character (vide Plate 26): other examples, sufficiently striking, will present themselves at every page of this work.

3. The *Natural Generic Character* is a careful description of all the parts of the fructification, as the *Calyx, Corolla, Stamina, Pistilla, Pericarp,* and *Seed*; and this was what Linnæus particularly prided himself in, and it is here he has displayed his Lyncæan mode of investigation; and although such a particular description will not constantly apply to all the species, it still has very considerable merit, and deserves every attention.

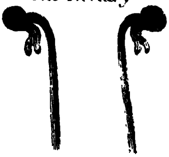
4. The *Secondary Characters* relate to those considerations which rarely indeed agree with all the species, and hence are called *Secondary*; as the *Stem, Leaves, Flowers,* and *Habitation;* yet these considerations, certainly, often aid in the investigation of the *Genera* of plants.

Introd. Pl 20.

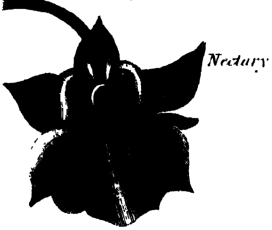
Monkshood



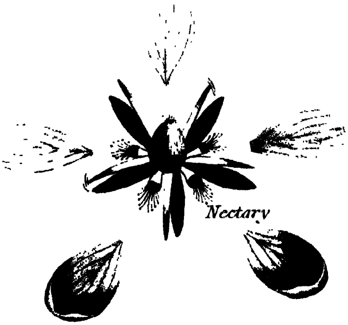
The Nectary



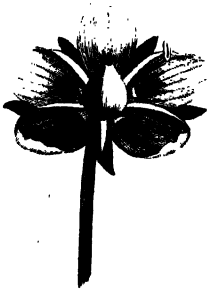
Columbine



D^{o} Diſsected



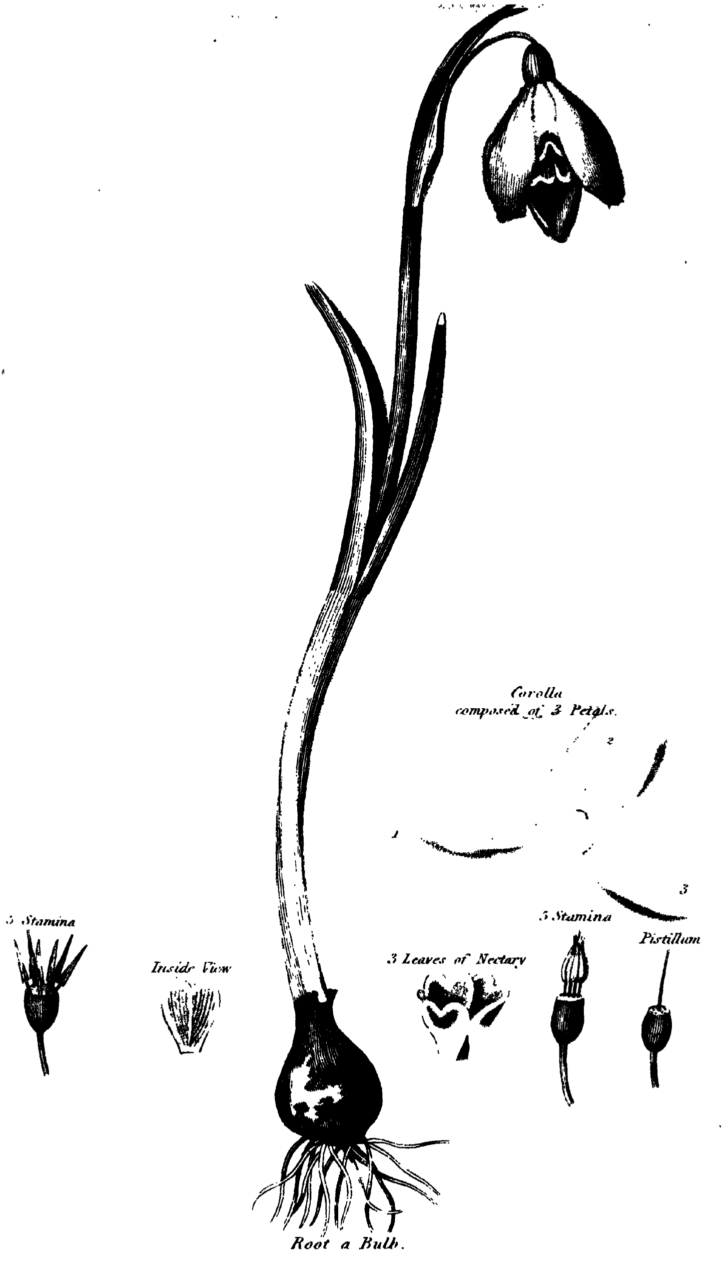
Parnassia



Henderson del

Mazel sculp

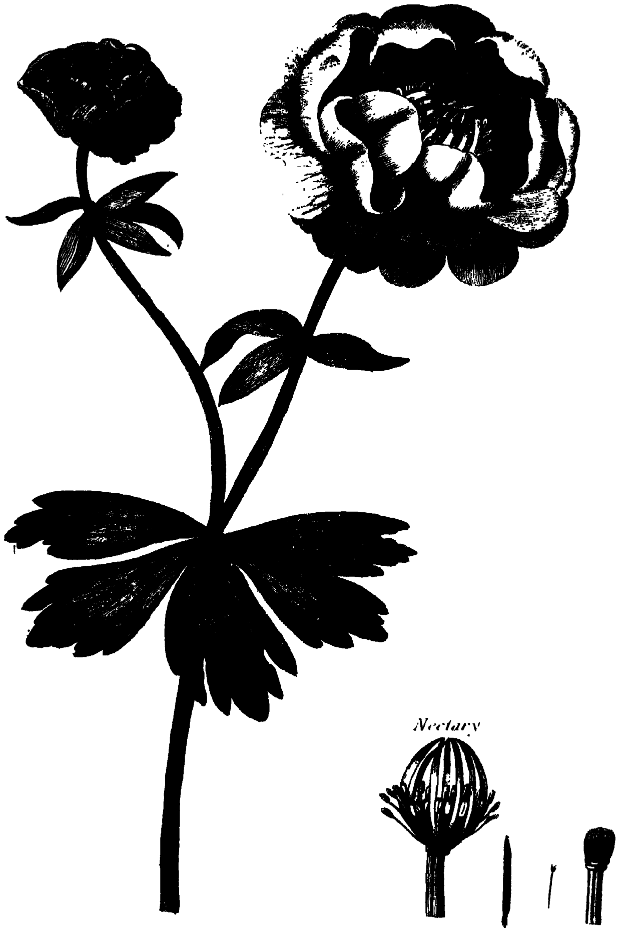
London, Published by D^{r} Thornton, July 1,1808


Corolla
composed of 3 Petals.
1
2
3
6 Stamina
Inside View
3 Leaves of Nectary
6 Stamina
Pistillum
Root a Bulb.

European Trollius.

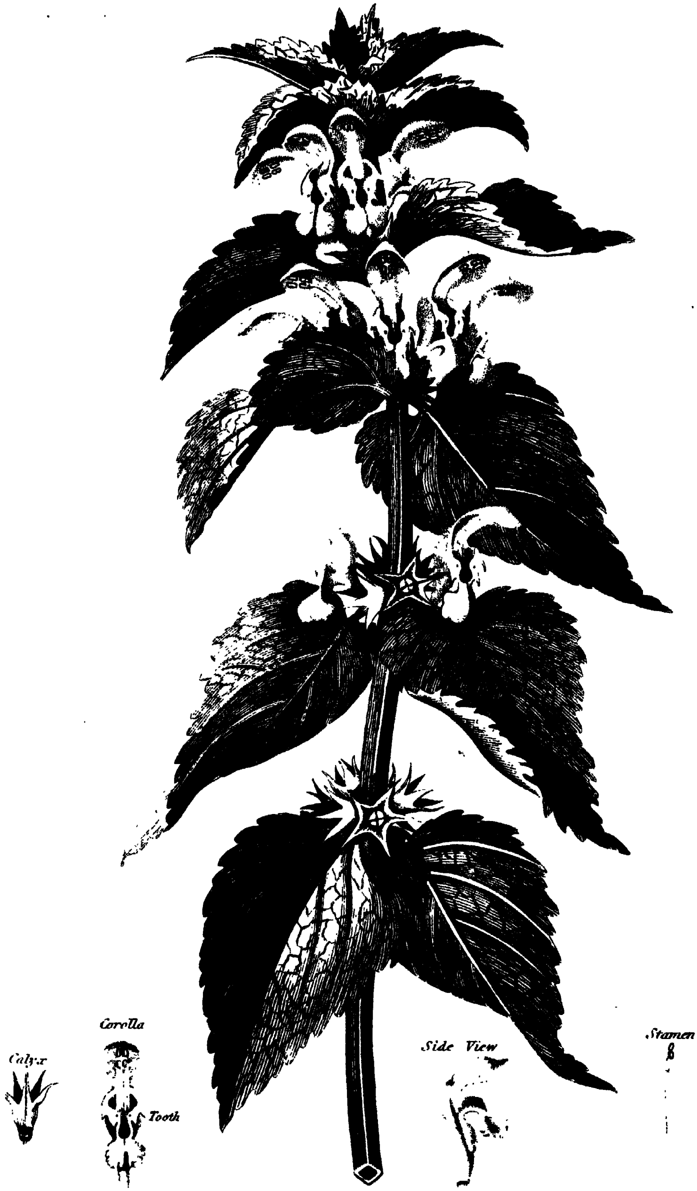
Pl: 22

Trollius Eropæus.



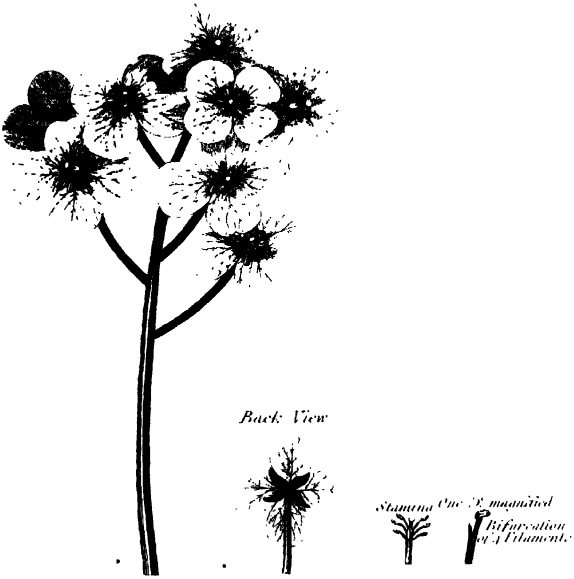
Henderson del.

London Published by Dr Thornton Aug.t 1 1808



Lamium Album *White dead Nettle*.

Sea Kale.
Crambe Maritima.

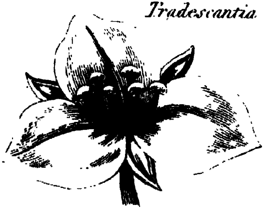


Henderson del

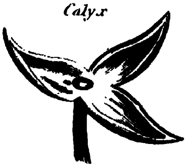
Mazel sculp

London Published by Dr Thornton Augst 1. 1808

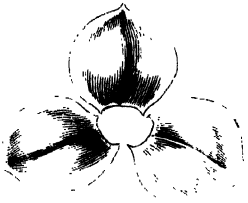
Spider-wort.
Tradescantia Virginica.



Calyx

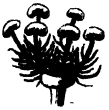


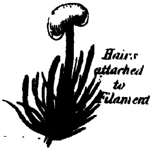
Corolla



One D.o Magnified.

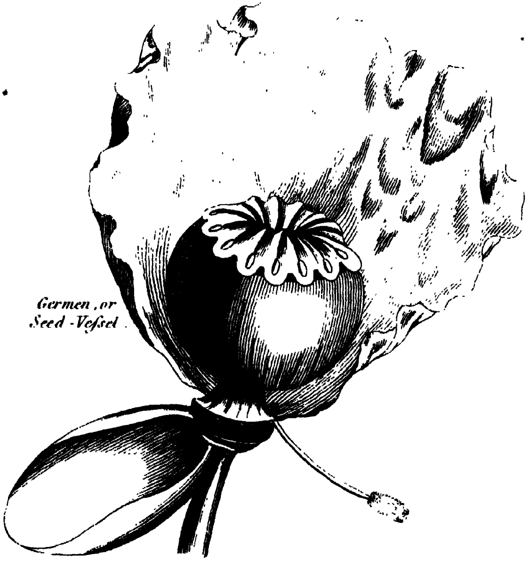
Stamina





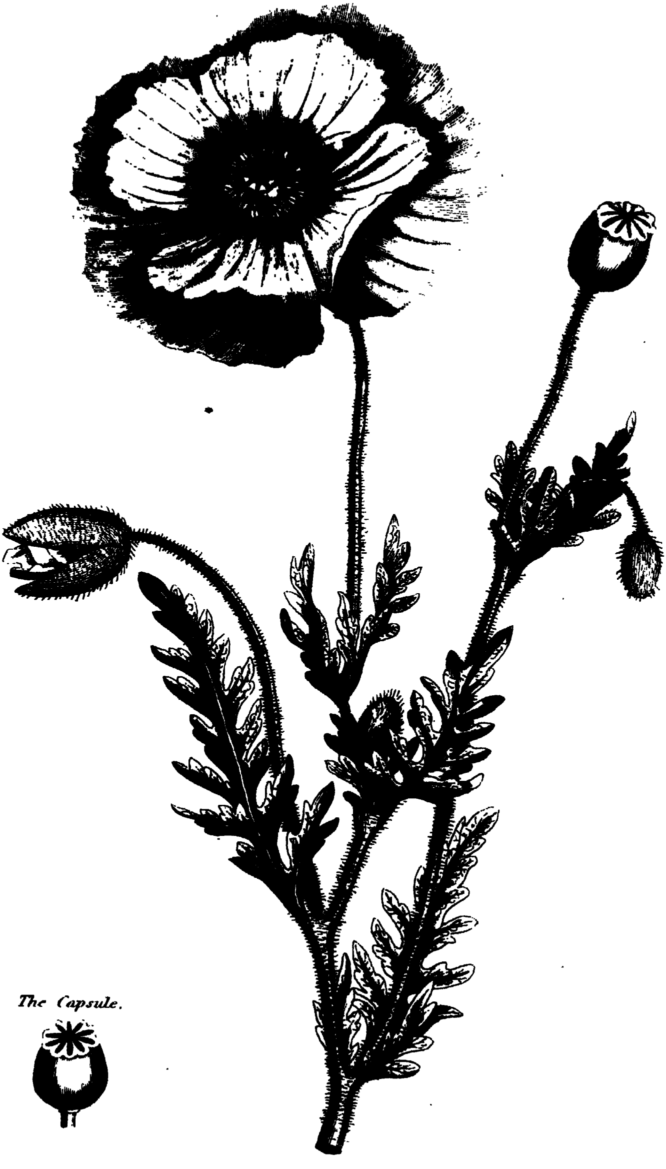
Pistillum

Poppy. *Papaver.*



Henderson del. *Mazel sculp.*

London Published by D.r Thornton Aug.st 1. 1808.



The Capsule.

Papaver dubium,

CLASS I.

MONANDRIA.

ONE STAMEN.

CLASS I....MONANDRIA. ONE STAMEN.

DISCRIMINATING CHARACTERS. — GENERA AND EXCEPTIONABLE SPECIES.

arison. Second *Comparison.* Third *Comparison.* Fourth *Comparison.* Fifth *Comparison.* Sixth *Comparison.*

- *DRIA.*
  - The *Pistilla* in common circumstances.
    - Order I. MONOGYNIA. (Flowers Bissexual simple.)
      - A *Corolla*.............................. 1. *Valeriana* [illegible] Vide Class III. and Plate [illegible]
      - No *Corolla*...
        - *Stigma* bifid................. 1. SALICORNIA. Vide plate 11. [illegible]
        - *Stigma* acute................. 2. HIPPURIS. Vide pl. 12. p. 12. [illegible]
    - Order II. DIGYNIA. (Bissexual simple.)
      - A *Corolla* (a) (a)............................ 3. CALLITRICHE. Vide pl. 13. p. 13. (c) [illegible]
      - No *Corolla*.............................. 2. *Aphanes* [illegible] Vide Class IV. pl. 7. p. 7.
  - The *Pistilla* peculiarly circumstanced.
    - Order III. GYNANDRIA. (Bissexual complex.)
      - A *Spadix*....
        - *Spadix* round................ 4. ARUM. Vide pl. 14. p. 14. (r)
        - *Spadix* flat.................. 5. ZOSTERA. Vide pl. 15. p. 15. (a)
      - No *Spadix*...
        - A *Corolla*....
          - *Flowers* on one side only. — 3. *Ophrys Spiralis*? Vide Class II. pl. 8. p. 8.
          - *Flowers* not so placed. — 4. *Ophrys Ovata*? Vide Class II. pl. 9. p. 9.
        - No *Corolla*.................... 5. *Hippuris vulgaris.* Vide Genus 2 above. pl. 10. p. 10.
    - Order IV. MONOECIA. (Unisexual.)
      - A *Filament*...
        - One *Pistillum*.................. 6. *Salix monandra.* Vide Class II.
        - Two *Pistilla*.................. 7. *Callitriche aquatica.* Vide Genus 3 above. pl. 13. (d)
        - 4 or 5 *Pistilla*.................. 6. ZANNICHELLIA. Vide pl. 16. p. 16. (a)
      - No *Filament*.
        - A *Spadix*.................. 8. *Arum maculatum*? Vide Genus 4 above.
        - No *Spadix*.................. 7. CHARA. Vide pl. 17. p. 17.
    - Order V. POLYGAMIA. (Bis-uni-sexual.)
      - A *Corolla*.............................. [illegible] Vide Genus [illegible] above.
      - No *Corolla*.............................. [illegible] *Hippuris vulgaris*? Vide [illegible] above.

CLASS I....MONANDRIA. ONE STAMEN.

ESSENTIAL GENERIC CHARACTERS.

GENERA.	I. CALYX.	II. COROLLA.	III. STAMEN.	IV. PISTILLUM.	V. PERICARP.	VI. SEED.
I. Bissexual, simple.						
1. SALICORNIA.	ventricose, entire. Vide pl. 11. p. 11. (*a*)	none.	one, or two. Pl. 11. (*e*)			enclosed by the calyx. Pl. 11. (*h*)
2. HIPPURIS.	none.	none.		*Stigma*, simple. Pl. 12. p. 12. (*e*)		one (*f*).
3. CALLITRICHE.	none.	2-petalled. Pl. 13. p. 13. (*a*) (*a*)		*Stigmas*, acute. Pl. 13. (*f*) (*f*)		four. Pl. 13. (*i*).
II. Bissexual, complex.						
4. ARUM.	*Spatha*, monophyllous, involute at bottom, concave at top, pointed. Pl. 14. p. 14. (*a*)	*Nectaries* in two orders, or tiers. Pl. 14. (*g*)	*Stamina* between the two tiers of nectaries. Pl. 14. (*h*)	*Pistilla* under the lower tier of nectaries. Pl. 14. (*f*) (*i*)		
5. ZOSTERA.	none.		*Anthers* sessile, opposite its corresponding germen, alternate. Pl. 16. p. 16. (*b*) (*d*)	*Stigmata* two. Pl. 16. (*e*)	*Capsule* one-seeded. Pl. 16. (*f*).	
III. Unisexual.						
6. ZANNICHELLIA.						
Male Flower.	none.	none.				
Female ditto.	monophyllous. Pl. 16. p. 16. (*e*)	none.		four. Pl. 16. (*d*)		
7. CHARA.				*Styles* none. Vide pl. 17. p. 17. (*b*)(*d*)	*Berry*, many-seeded. (Pl. 17. p. 17. (*e*)	

ESSENTIAL

GENERA.	I. CALYX.	II. COROLLA.
I. Bissexual, simple.		
1. SALICORNIA....	ventricose, entire..... Vide pl. 11. p. 11. (*a*)	none...............
2. HIPPURIS.......	none.................	none...............
3. CALLITRICHE...	none..................	2-petalled........... Pl. 13. p. 13. (*a*) (*a*)
II. Bissexual, complex.		
4. ARUM.........	*Spathe*, monophyllous, involute at bottom, concave at top, pointed............... Pl. 14. p. 14. (*a*)	*Nectaries* in two orders, or tiers........... Pl. 14. (*g*)
5. ZOSTERA.......	none.................	....
III. Unisexual.		
6. ZANNICHELLIA.		
Male Flower....	none.................	none...............
Female ditto....	monophyllous....... Pl. 16. p. 16. (*a*)	none...............
7. CHARA..........	....	....

OF THE TWO TABLES.

How to use the First Table.

The searcher after any unknown plant may be said to be upon a BOTANICAL JOURNEY, and the flower he holds in his hand is his *directory*.

Having fixed his *starting place*, THE CLASS, he has *one of two roads* to choose, and understanding the discriminations given (like directions upon sign-posts), and comparing these with the flower in his hand, he is agreeably conveyed from *stage* to *stage* until he arrives at the *last comparison*; which conducts him instantly to the family, or generic, name of the plant he was in pursuit of.

To those of *riper years*, such BOTANICAL EXCURSIONS resemble the mode of acquiring the MATHEMATICS, or the procedure of LOGIC: we advance from *known propositions* to *unknown*, and thus acting analytically, step by step, we ultimately arrive at "*quod erat probandum.*"

This method of discovering a plant by comparisons, and these derived from a few particulars, and those of the most striking kind, is an *agreeable* and *noble exercise* of the *understanding*.

To those of an *under-age*, such studies might be called an amusing PUZZLE; and rewards for discovery being made, proportioned to the lengths of the journeys taken, might soon be made to supersede the GAME OF GOOSE, and those OTHER GAMES, which only inflame the passions, without enlarging the understanding.

[illegible] *employed in the First and Second Tables.*

Discriminating Characters are derived from easy comparisons, by which we collect under one head flowers agreeing in one single circumstance; and in this way we go on dividing and subdividing until we find the last difference, thereby separating that individual from all the rest.

Genus, a common appellation to several species, all agreeing in the most material parts of their fructification.

Exceptional Species. Where particular genera arranged under a different class [illegible] one or more species deviating from the classical character, under [illegible] such genus is placed.

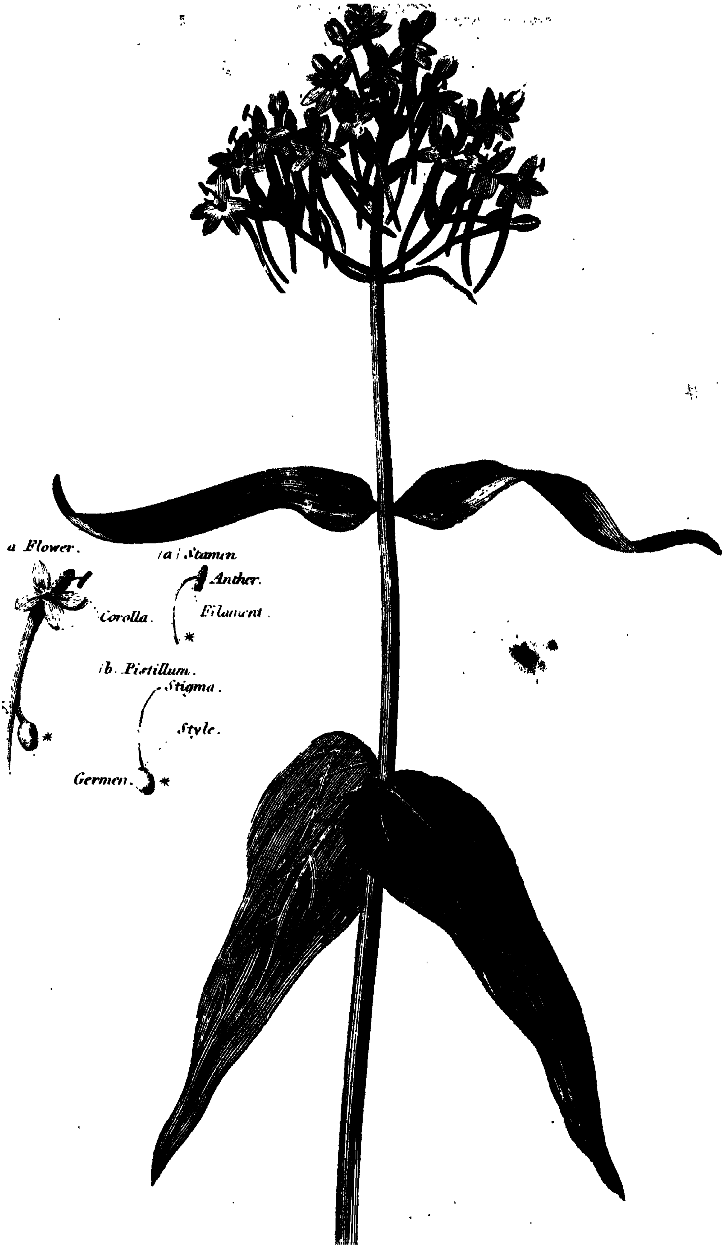
Class. The largest division; all the plants included under one common head, from agreement in one particular; namely the number of stamina. Example, Class I. Monandria; all plants whose flowers posses but one stamen.

Monandria, from *monos*, Greek, one, and *aner*, Gr. a man. The first class, as [illegible] one stamen only, which as serving the male office in the flower is called figuratively the husband. Example, Valeriana rubra. *Vide plate 6. letter (a).*

The Pistillum in common circumstances. The common form of flowers is to have the pistillum, or pistilla, the females, in the center of the flower, and the stamina, or males, surrounding these. Example, Valeriana rubra. *Pl. 6. (a)*

Bissexual simple, from *bis*, Latin, two, and *sexualis*, L. sexual, as possessing the two sexes, the pistilla and stamina, in the same corolla; *simple*, as [illegible] generative organs of plants are not affixed to a spadix, or confounded together, as in the bissexual complex. Example, Valeriana rubra. *Pl. 6. (a) (b)*

Bissexual complex, the two sexes placed in the same corolla, but the stamina have this peculiarity of origin. These are either affixed to a spadix, or grow out of the pistillum itself. Example, Arum. *Vide pl.* [illegible] 14. *letter* (*e*).—Hippuris. *Vide pl.* 12. *n.* 12. (*a*)


a Flower.
Corolla.
(a) Stamen
Anther.
Filament.
(b) Pistillum.
Stigma.
Style.
Germen.

Unisexual, from *unus*, L. one, and *sexualis*, L. sexual, is when the corresponding sexual organs are separate, being in different corollas. Example, Callitriche Aquatica. *Vide pl.* 13. *p.* 13.

Order, the grand divisions of a class. Example, Monogynia, Order I. One Pistillum.

Monogynia, from *monos*, G. one, and *gune*, G. a woman, the flower having only one pistillum, which is the female organ of a plant.

Digynia, from *dis*, G. two, and *gune*, G. a woman, as two pistilla. Example, Callitriche aquatica. *Vide pl.* 13. *p.* 13. (d)

Gynandria, from *gune*, G. a woman, and *aner*, a man. In compound botanical words, it is the custom for the first word to have the pre-eminence, and this word is applied where the stamina actually grow out of any part of the pistillum itself, or arise from a pillar, or pedicle, or spadix, supporting both stamina and pistillum. If the term were admissible these are the true hermaphrodite flowers. Example, Hippuris. Arum. *Vide pl* 12. *p.* 12, and *pl.* 14. *p.* 14.

Monœcia, from *monos*, G. one, and *oikos*, G. an habitation, is where are found on the same plant the pistilla and stamina in separate corollas. The flower having only pistilla is called a female flower, or pistil-bearing flower; that possessing the stamina apart, a male flower, or stamen-bearing flower. These are also called unisexual, contra-distinguished from bissexual. Example, Callitriche. *Vide pl.* 13. *p.* 13.

Polygamia, from *polus*, G. many, and *gamos*, G. marriage, is where, along with a bissexual flower, is also to be met an unisexual flower on the same or different plants. Example, Callitriche. *Vide Tab.* 11.

Spadix, is a fleshy receptacle of such flowers as are usually first enclosed in a spatha or sheath. Example, Arum. *Vide pl.* 14. *p.* 14. (e)

Stigma bifid, cloven, split in two. Salicornia. *Vide pl.* 11. *p.* 11. (f)

Essential Generic Characters. The most prominent features of plants, taken from the flower in which all the species collected under one name agree, and supposed to be sufficient to establish or constitute the genus. The examples are Salicornia, &c. *Vide Tab.* 2. *p.* 9.

DEFENCE

OF THE

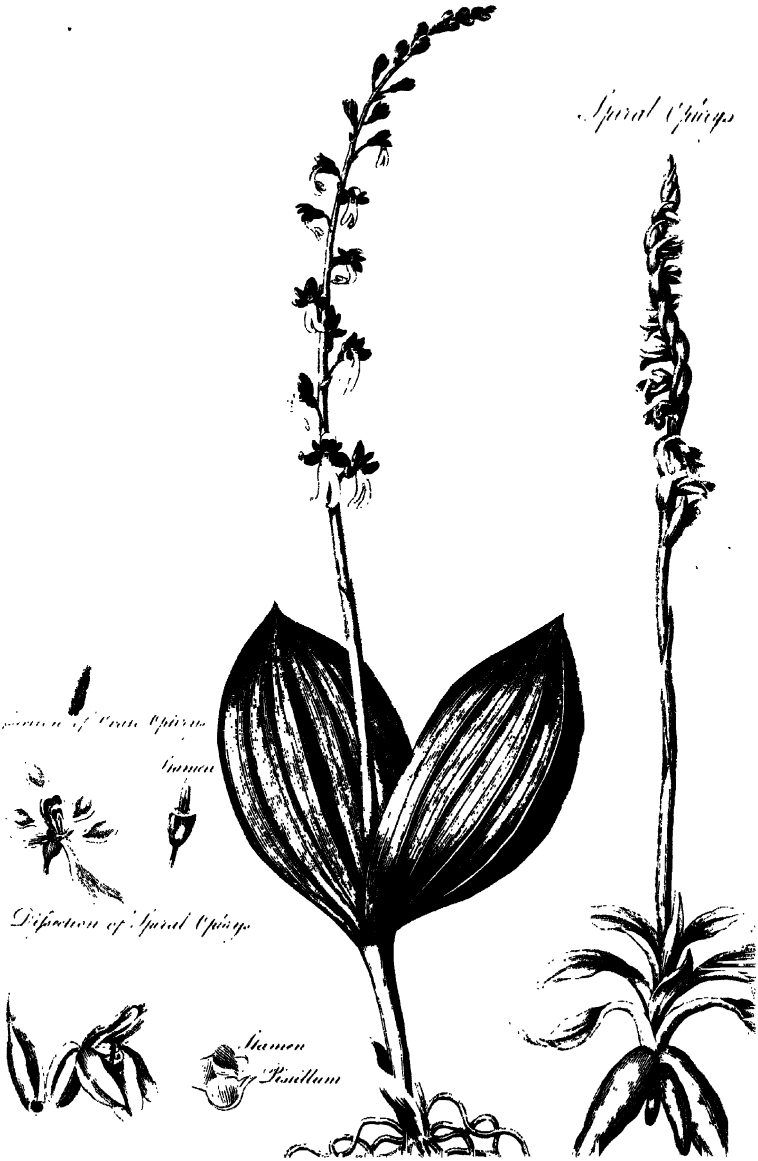
REFORMED SEXUAL SYSTEM.

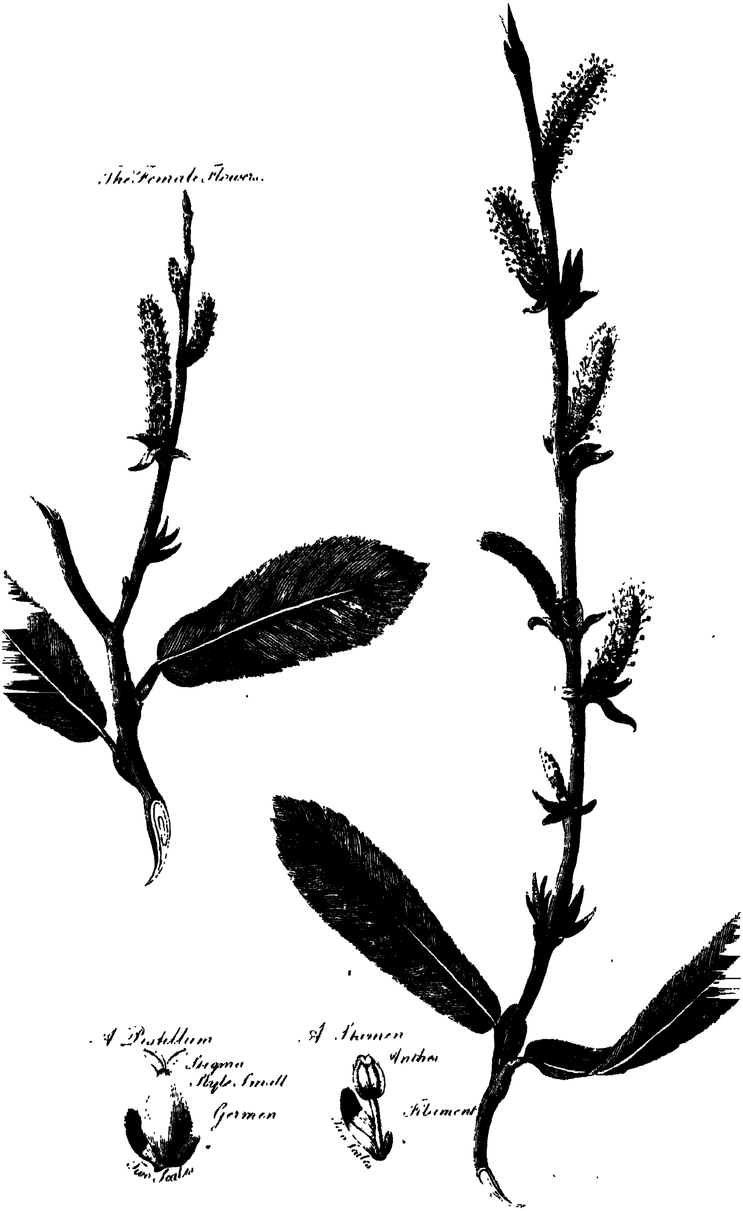
In my reformed Sexual System, the *classical character*, as derived from the *Number of Stamina*, is the most simple imaginable; which should be the case, as being the first step in Botany, and hence a very pleasing uniformity in the *classes* prevails throughout.

The *Orders* arise from the consideration of the peculiar circumstances of the pistilla; and here also much uniformity is preserved. Had the Orders, III. Gynandria, IV. Monœcia, and V. Polygamia, been retained as *classes*, Monandria, which before was employed as the *classical character*, must be then used as an *Order*, and *uniformity* be altogether destroyed; and much *perplexity* to the student (as in teaching I have often found) be produced.

Where any flower is with difficulty arranged, the student, in the old system, has to jump from one class to another, and the doubt then is seldom cleared up without much labour; which is now completely obviated by bringing, from this reform of the sexual system, all the possible situation of things in a preliminary table under one head. For instance, suppose the student met with the *Valeriana rubra*, Red Valerian, the first exceptional species, (*Vide Table I. and Plate* 6. *facing page* 6) in none of the twenty-four classes of Linnæus, would he be able to find it, as being an *objectional species*, which he is supposed by Linnæus to be able to refer at once to its kindred genus, although this might occur to the student at his very onset in the study of botany.

The Salicornia (*Genus I.*) is somewhat more easy; but the Hippuris (*Genus II.*) is extremely difficult. It is placed in the class Monandria by Linnæus, although he denies a calyx. Now if the filament arises out of germen itself, and is not seated on a calyx crowning the germen, it would properly fall into another class, Gynandria, (*so placed here,*


Ovate Ophrys
Spiral Ophrys
Diſsection of Ovate Ophrys
Stamen
Diſsection of Spiral Ophrys
Stamen
Pistillum


The Female Flower
A Pistillum
Stigma
Style. Small
Germen
Flow. Scales
A Stamen
Anther
Filament
Flo. Scales

vide Exceptional Species 5.) and if with bissexual, unisexual flowers were found, in the Class POLYGAMIA, (*Vide Exceptional Species the* 10*th.*)

Under these three views has the present flower been placed by different botanists in three different classes; and if the student did not hit upon the same point of distinction as the respective authors, he would be baffled in his research, whereas from my preliminary table of the reformed system no possible mistake can arise to him.

So of CALLITRICHE, (*Genus III.*) whose flowers are sometimes upon the same plant bissexual simple, or all unisexual, (*Vide the 7th Exceptional Species*), and again, a compound of the two, (*Vide Exceptional Species* 9.) which upon any other plan than mine would create much perplexity.

The APHANES ALCHEMILLA (*Vide Tab. I. Exceptional Species* 2.) is another puzzle, like the red Valerian. In Withering it is a genus of itself placed in the first class, and by Dr. Smith placed as a species of Alchemilla in the fourth.

The next genus, the ARUM, (*Genus IV.*) is even doubted by Linnæus under what class it should be arranged. He has thought fit to place it as a GYNANDRIOUS plant; but Schreber, Berkenhout, &c. have esteemed it of the class MONŒCIA, and displaced it from its first situation; but in our table, under whatever aspect we view it, it presents itself at once, as being placed under each point of view. (*Vide Tab. Gen.* 4. *and Exceptional Species* 8.)

In like manner (*Genus* 5) ZOSTERA is placed in Class XX. Gynandria, by Linnæus, and in the first class by Dr. Smith. The same remarks, as made respecting VALERIANA RUBRA, will equally apply to OPHRYS SPIRALIS and OVATA (*Vide pl.* 8 *and* 9, *facing p.* 8 *and* 9), SALIX MONANDRA (*Vide plate facing p.* 9), and CALLITRICHE VERNA (*pl.* 13. *facing p.* 13.)

CHARA (*Genus* 7) is placed in Class XXI. *Monœcia,* by Linnæus, and in Class I. *Monandria,* by Dr. Smith. Our table is so contrived that if the student fails in one step, he has not far to go in order to have his wanderings corrected.

In a word, as by system is only meant a plan to *facilitate* the acquirement of the knowledge of plants, the more easy this is contrived to accomplish the proposed end the better such a system will be accounted; and I have endeavoured so to contrive this, that I hope no longer any very great obstacles can arise in the way of tempt the *reformation* of a system which has conferred immortal honour upon the inventor, and received the general plaudits and admiration of the learned throughout Europe. It appeared to me more advisable to *reform* the whole, than to make any *partial amendments*;* to have the system as delivered to us by Linnæus, or pulled to pieces, and a new one erected out of the materials of the old; a *system* which I hope may not moulder, like the other systems,† into the sand of which they were composed, but like the youthful PHŒNIX arising from the ashes of its parent, or as a rock in the midst of the ocean, may remain until "the wreck of elements and the crush of worlds."

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* Many alterations in the Sexual System have been attempted. The enlightened pupil of Linnæus, THUNBERG, abolished the classes XX. *Gynandria*, XXI. *Monœcia*, XXII. *Diœcia*, and XXIII. *Polygamia*. GMELIN, professor at Gottingen, to the alterations introduced by Thunberg, in publishing a new edition of Linnæus's Systema Naturæ, added the abolition of Class XII. *Icosandria*; and the no less celebrated Dr. SMITH, preserving the rest of the system entire, has abolished Order V. *Monogamia* in Class IX. *Syngenesia*, and Class XXIII. *Polygamia*. "To his class Polygamia," says Dr. Smith, "many students of tropical plants *justly* objected in his lifetime, and he, as well as his son, listened to their observations." Dr. WITHERING, in his arrangement of British Plants, has followed the system of Gmelin. Professor MARTYN, speaking of the changes introduced by SCHREBER, in his new edition of Linnæus's Genera Plantarum, says, that his reduction of Class XX. *Gynandria*, appears "*reasonable*," yet the singularity of the order *Diandria* surely demanded a separate place to itself. But when he comes to mention the incorporation by GMELIN of the class *Icosandria* into the *Polyandria*, he declares this change to be "*abominable*."

I am aware, that venturing to reform in such a degree the sexual system, as I have done, will bring upon me much, I trust, unmerited reproach. I am conscious, indeed, as well as others, that the credit of the *Sexual System* of Linnæus, as an *invention*, surpasses all power of praise, and hence has found enthusiastic admirers; and with timid hands I have ventured to take the *superstructure* he raised to pieces, and build up from the *old materials*, which I have *carefully* and *religiously* preserved, a NEW EDIFICE, suited to modern improvement and convenience; hoping, however, that those who may, hereafter, publish the works of Linnæus, will edite the Sexual System as delivered by himself, and not bring forward, in the works said to be those of Linnæus, what he never either thought or wrote. For a full defence of the *Reformed Sexual System* vide my "New Illustration of the Sexual System," now publishing in Numbers, where this subject has been particularly considered and discussed.

† Not less than sixty systems of Botany have been published, chiefly alterations and amendments of each other, most of which are now forgotten.

THE

GENERA AND EXCEPTIONAL SPECIES

OF

CLASS I.

MONANDRIA.

ONE STAMEN.

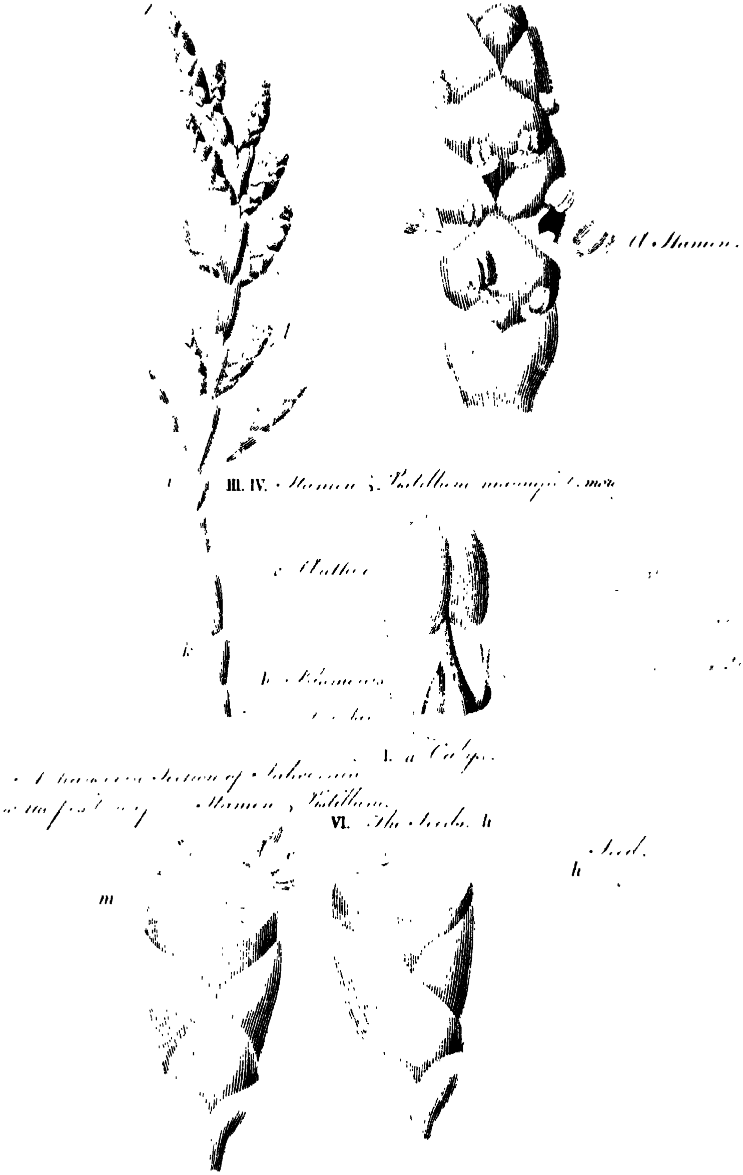
GENERA.

Page
1. SALICO'RNIA. Glass-wort..........................11
2. HIPPU'RIS. Mare's-tail..........................12
3. CALLI'TRICHE. Star-wort..........................13
4. ARUM. Cuckoo-pint..........................14
5. ZOSTE'RA. Sea-wrack..........................15
6. ZANNICHEL'LIA. Pond-weed..........................16
7. CHARA. Stone-wort..........................17

EXCEPTIONAL SPECIES.

1. VALERIA'NA RUBRA. Red Valerian.
2. A'PHANES ALCHEMILLA. Parsley Piert.
3. OPHRYS SPIRA'LIS. Spiral Ophrys.
4. OPHRYS OVA'TA. Egg Ophrys.
5. HIPPU'RIS VULGA'RIS. Common Horse-tail.
6. SALIX MONANDRA. One-stamen'd Willow.
7. CALLITRICHE AQUA'TICA. Aquatic Starwort.
8. ARUM MACULA'TUM. Spotted Cuckoo-Pint.

For these, vide Table I. page 5.


d. Stamen.
III. IV. Stamen & Pistillum magnified more
c Anther
b Filament
k
I. a Calyx
A transverse Section of Calyx
magnified Stamen, Pistillum.
VI. The Seeds. h
Seed.
h
m

NATURAL AND SECONDARY
GENERIC CHARACTERS.

Class I. *Monandria.* Order I. *Monogynia.*

GENUS 1.

SALICORNIA. *Salt-wort.*

(A compound name from Sal, L. *salt*, as this maritime plant is burnt to obtain *alkali*; and cornu, L. *a horn*, from the resemblance its branches have, or their articulations, to *horns*.—*Salt-wort*, the English name, expresses the first consideration as above, and the old English or Saxon word *wort* means *plant.*)

THE NATURAL GENERIC CHARACTERS.

I. Calyx. A *Perianth*, tetragonal, truncated, ventricose, abiding. Vide Plate II. (*a.*)

II. Corolla, none.

III. Stamen. *Filament*, one?* simple, longer than the calyx. (*b*) *Anthers*, two, oblong, twin, erect. (*c*)

IV. Pistillum. *Germen*, ovate-oblong. (*d*) *Style*, simple, under the stamen. (*e*) *Stigma* bifid. (*f*)

V. Pericarpium, none; *Calyx* serving the office, ventricose, inflated.

VI. Seed, one. (*h*)

THE SECONDARY CHARACTERS.

I. Stem, herbaceous or frutescent, without leaves, branches opposite, cylindric, articulate, (*i*) articulations bidentate; (*k*) superior articulations flower-bearing. (*l*)

II. Flowers, very small, sessile, generally three on each side. (*m*)

III. Habitation, the sea-shore.

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* Some report they have observed two filaments. Linnæus.

GENUS 2.

HIPPURIS. *Mare's-tail.*

(From HIPPOS, G. a *horse,* and OURA, G. a *tail,* which appearance this plant is supposed to resemble.—In old Gerard the *Equisetum* is called the *Male Horse-tail,* and the HIPPURIS the *Female Horse-tail.* HUDSON was the first who named the Hippuris *Mare's-tail.*)

THE NATURAL CHARACTERS.

I. CALYX, none.

II. COROLLA, none.

III. STAMEN. *Filament* one, sitting upon the receptacle of the flower. (*a*) *Anther* semibifid. (*b*)

IV. PISTILLUM. *Germen* oblong, above. (*c*) *Style* one, subulate, erect, between the stamen and the stem, longer than the stamen. (*d*) (*d*) *Stigma* acute. (*e*)

V. PERICARPIUM. None.

VI. SEED. One, roundish, naked. (*f*)

THE SECONDARY CHARACTERS.

I. STEM, cylindric, simple. (*g*)

II. LEAVES, verticillate. (*h*)

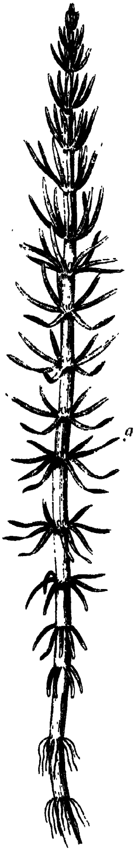
III. FLOWERS, axillary, sessile. (*i*)

IV. HABITATION. In rivers, ponds, and stagnant waters.

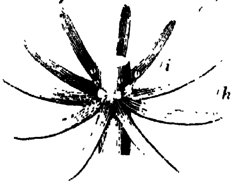
HIPPURIS VULGARIS.

COMMON MARE'S-TAIL.

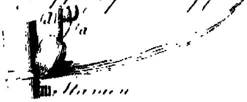
A branch of Hippuris.



Part of the same magnified.



A greater magnifying power applied.



B. — *Pistillum.*

c *Stigma.*

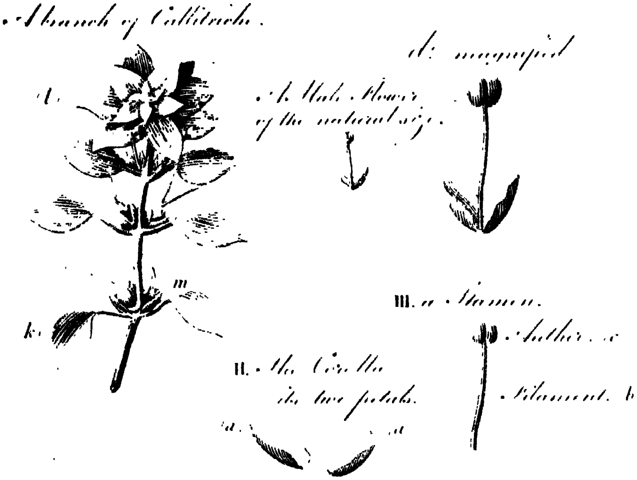
d *Style.*

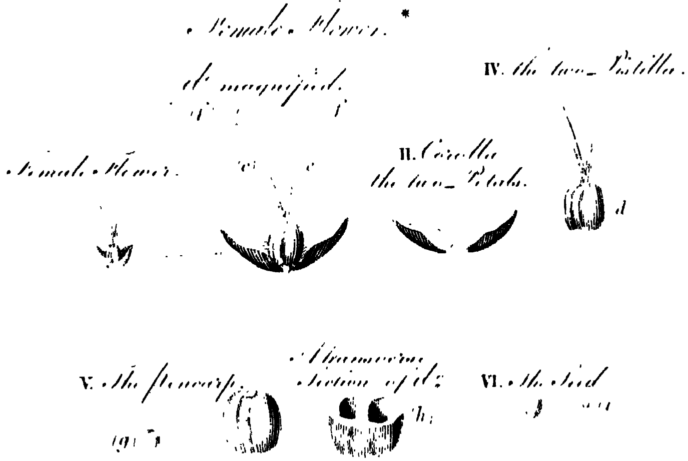
e *Germen.*

Anther. b

Filament.

VI. *The Seed*





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* This Species varies, sometimes the Flowers are all Bisexual sometimes Unisexual as in our specimen, and sometimes Bis

GENUS 3.

CALLITRICHE. *Star-wort.*

(From KALOS, G. *beautiful*, and THRIX, G. *hair*, from the matting together of its leaves over deep marshes, that a person might walk over them without sinking:—the English appellation is from the upper part of the foliage, making the appearance of a *star*.)

THE NATURAL CHARACTERS.

I. CALYX, none.

II. COROLLA. *Petals*, two, incurved, acuminate, channelled, opposite. (*a*) (*a*)

III. STAMEN. *Filament* one, long, recurved. (*b*) *Anther* simple. (*c*)

IV. PISTILLUM. *Germen* roundish. (*d*) *Styles* two, capillary, recurved. (*e*) (*e*) *Stigmata* acute. (*f*) (*f*)

V. PERICARPIUM. *Capsule* roundish, (*g*) quadrangular, compressed, bilocular. (*h*)

VI. SEED, one, oblong. (*i*)

THE SECONDARY CHARACTERS.

I. STEM, small, branched.

II. LEAVES opposite, (*k*) clustered above. (*l*)

III. FLOWERS, small, axillary, sessile, (*m*) bissexual, or unisexual, monœcious.

IV. HABITATION. Lakes and stagnant waters.

Class I. *Monandria.* Order III. *Gynandria.*

GENUS 4.

ARUM. *Cuckoo-pint.*

(From ARA, G. *noxious,* alluding to the acrimony of its root, or from JARON, Arab. *a dart,* its leaves being shaped like a dart. The English, *Cuckoo-point,* from its appearing in the *Spring* when the cuckoo sings; and *pint* means *dart.*)

THE NATURAL CHARACTERS.

I. **Calyx.** *Spatha* monophyllous, very large, (*a*) oblong, convolute at the base, (*b*) converging at the apex, (*c*) compressed in the belly, (*d*) internally coloured.

II. **Spadix,** club-shaped, very simple, rather shorter than the spathe, coloured, (*e*) beneath covered with germina, (*f*) withering above the germina. (*l*)

III. **Corolla,** none.

IV. **Stamina.** *Filaments,* none, unless you count as such the nectaries thickened at the base, ending in filiform cirrhi, placed in two orders, proceeding from the middle of the spadix. (*g*) (*g*) (*g*) *Anthers* many, sessile, four cornered, (*h*) interposed between the double orders of cirrhi, growing to the spadix. (*h*)

V. **Pistillum.** *Germina* many, investing the base of the spadix, placed beneath the stamens, obovate. (*i*) (*i*) *Styles* none. *Stigmata* barbed with villi. (*k*)

VI. **Pericarpium.** Berries as many as the germina, globose, (*l*) (*l*) unilocular. (*m*)

VII. **Seeds,** many, roundish. (*n*)

THE SECONDARY CHARACTERS.

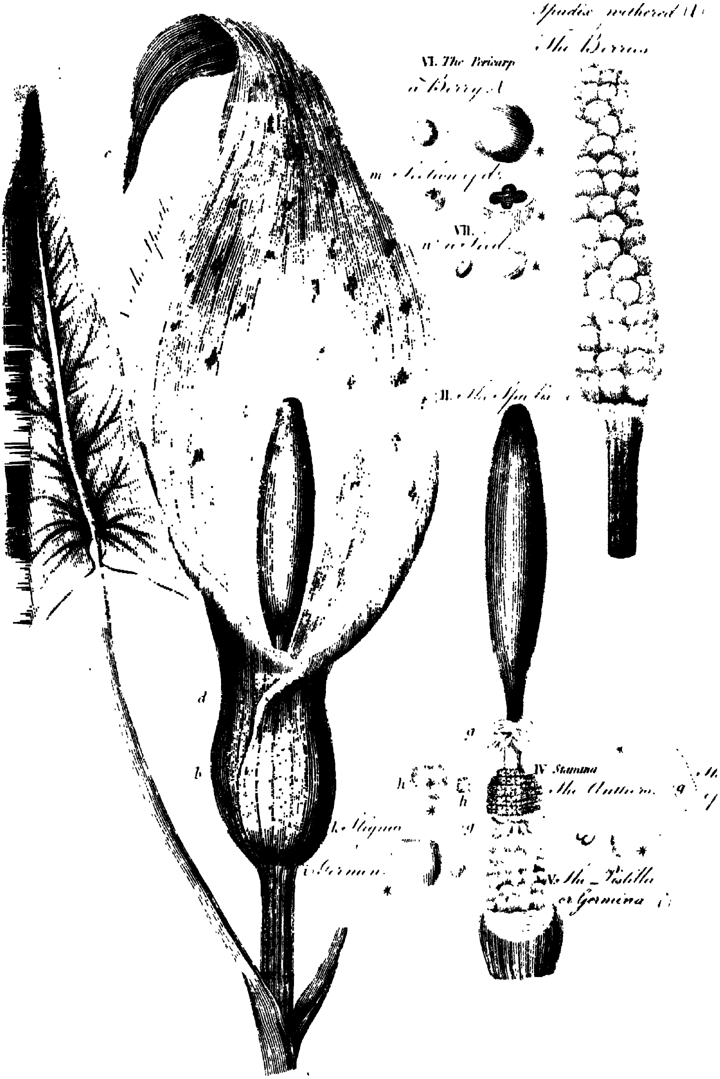
I. **Leaves** hastate, entire (or multifid).

II. **Flowers** sessile, unisexual, stamineous, (*h*) and pistilliferous. (*f*)

III. **Habitation.** In shady places, or in ditches protected by a hedge.

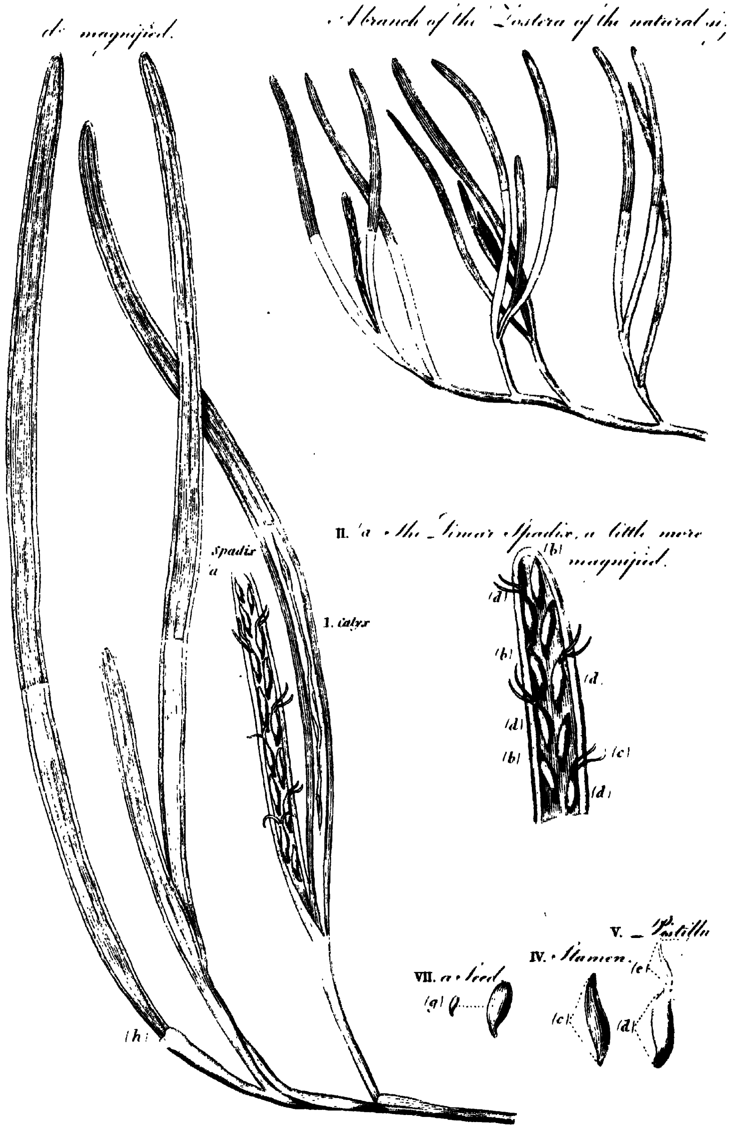
Ex. ARUM MACULATUM.

SPOTTED CUCKOO-PINT.



EX. ZOSTERA MARINA.

COMMON GRASS-WRACK.


Do magnified.
A branch of the Zostera of the natural si
Spadix
a
1. Calyx
II. (a) The Linear Spadix, a little more magnified.
(b)
(d)
(b)
(d.
(d)
(b)
(c)
(d)
(h)
V. Pistilla
IV. Stamen.
(e)
VII. a Seed
(g)
(c)
(d)

Class I. *Monandria.* Order III. *Gynandria.*

GENUS 5.

ZOSTERA. *Grass-wrack.*

(From ZOSTER, G. *a girdle,* in allusion to its shape,—and GRASS-WRACK, from its resembling a long blade of grass, and as being thrown up upon the sea-coast.)

THE NATURAL CHARACTERS.

I. **Calyx.** The base of the leaf a sheath, converging longitudinally, above on both sides emarginate, including the spadix. (*a*) No perianth

II. **Spadix,** linear, flat; on one side above furnished with stamens, (*b*) and beneath with pistilla. (*c*)

III. **Corolla,** none.

IV. **Stamina.** *Filaments* alternate, many, very short, inserted into the spadix above the germina. (*b*) (*b*) (*b*) *Anthers* ovate-oblong, nodding, obtuse, above subulate, incurved. (*c*)

V. **Pistilla.** *Germina* ovate, compressed, two-edged, subpedicelled, affixed to the apex, nodding, alternate. (*d*) (*d*) (*d*) (*d*) *Styles* none. *Stigmata* two, capillary, simple. (*e*)

VI. **Pericarpium,** membranous, not changing, gaping longitudinally at the lateral angle. (*f*)

VII. **Seed,** one ovate. (*g*)

THE SECONDARY CHARACTERS.

I. **Stem,** jointed. (*h*)

II. **Leaves** alternate, entire, linear.

III. **Flowers,** small, sessile, on a spadix.

IV. **Habitation.** On the sea-shore, and in salt marshes.

Class I. *Monandria.* Order IV. *Monœcia.*

GENUS 6.

ZANNICHELLIA. *Pond-weed.*

(Named after Zannichellius, a botanist;—and the English name is from this plant growing common in water.)

THE NATURAL CHARACTERS.

MALE FLOWER. (A)

I. **Calyx,** none.

II. **Corolla,** none.

III. **Stamina.** *Filament* one, simple, long, upright. (*a*) *Anther* ovate, upright. (*b*)

FEMALE FLOWER. (B)

I. **Calyx.** *Perianth,* monophyllous, ventricose, tridentate, scarcely manifest. (*c*)

II. **Corolla,** none.

III. **Pistillum.** *Germina* four, horn-shaped, converging. (*d*) *Styles,* as many, simple, somewhat spreading. (*e*) *Stigmata,* ovate, flat, patent outwards. (*f*)

IV. **Pericarpium,** none.

V. **Seeds,** as many as the germina, oblong, (*g*) at both ends acuminate; (*i*) (*i*) on one side gibbous, covered with cortex, curved, reflexed.

THE SECONDARY CHARACTERS.

I. **Stem** immersed in water, weak, slender, articulated, very much branched.

II. **Leaves,** linear, alternate beneath, (*k*) (*k*) or opposite, (*l*) (*l*) and in bunches towards the summit of the branches.

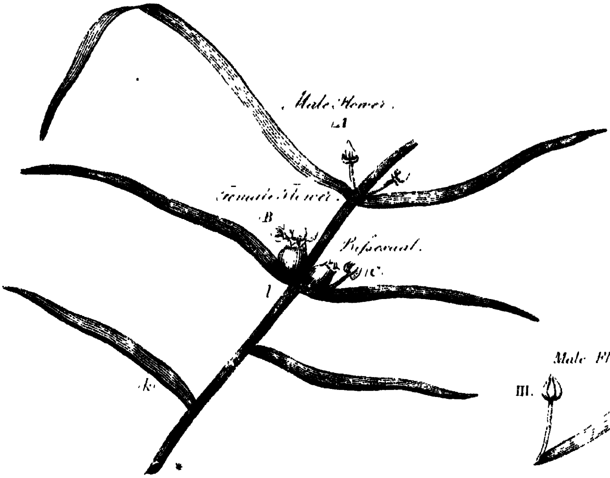
III. **Flowers,** axillary. (*m*)

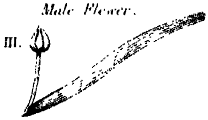
IV. **Habitation,** in ditches and stagnant waters.

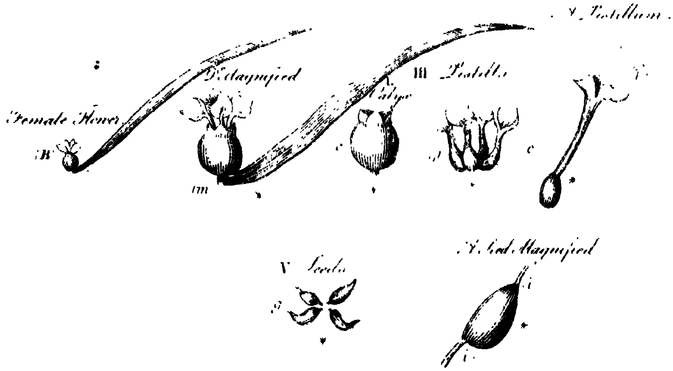
ZANNICHELLIA PALUSTRIS

MARSHY POND-WEED.

Bisexual & Unisexual Flowers.



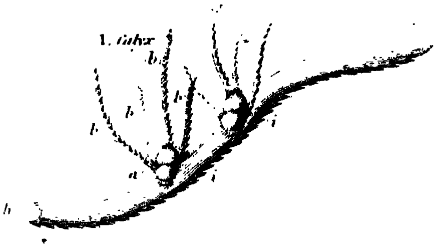




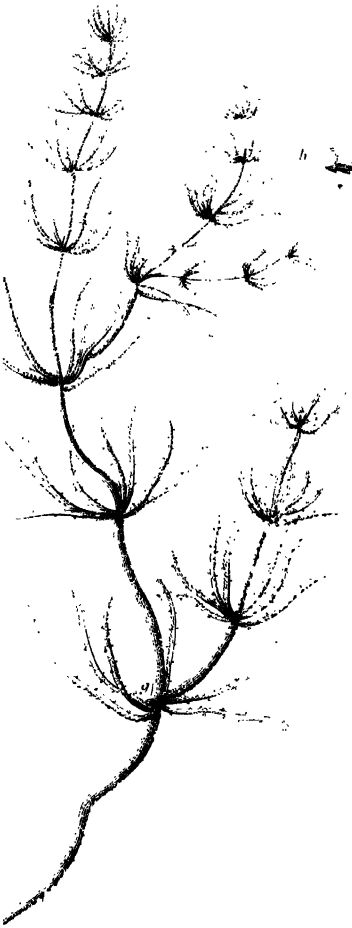
CHARA VULGARIS.

COMMON STONE-WORT.

A leaf magnified



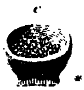
The Plant itself.

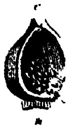


A. *Male Flower*
III. *Stamen*

B. *Female Flower*
III. *Pistillum*

IV. *Pericarp.*





V. *Seeds.*

Class I. *Monandria.* Order IV. *Monœcia.*

GENUS 7.

CHARA. *Stone-wort.*

(From KARA, G. *joy*, the delight or joy of the water—and the English name from its acid juice decomposing the water, and the selenite attaching itself to the plant, making about it a *stony* incrustation.)

THE NATURAL CHARACTERS.

MALE FLOWER. (A)

I. Calyx, none.

II. Corolla, none.

III. Stamen. *Filament*, none. *Anther*, globular, at the base of the germen, outside of the calyx. (*a*) (*a*)

FEMALE FLOWER. (B)

I. Calyx. *Perianth*, four-leaved; leaflets subulate, long, persisting. (*b*) (*b*)(*b*) (*b*)

II. Corolla, none.

III. Pistillum. *Germen* turbinate, marked with five spiral striæ. (*c*) *Style* none. *Stigma* five-toothed, small. (*d*)

IV. Pericarp. *Berry* encrusted, ovate-oblong, striated, one-celled. (*e*) (*e*)

V. Seeds, many, sperical, very minute. (*f*)

THE SECONDARY CHARACTERS.

I. Stem, branchy; (*g*) fragile, more or less rough to the touch.

II. Leaves, linear, toothed. (*h*)

III. Flowers, monœcious, placed on the leaves, (*i*) male and female contiguous.

IV. Habitation, in stagnant waters.

CLASS II.

DIANDRIA.

TWO STAMINA.

FURTHER DEFENCE

OF THE

REFORMED SEXUAL SYSTEM.

flower having *two stamina,* growing wild in this country, is at once to Class II. DIANDRIA.

same arguments as formerly alledged upon entering Class I. NDRIA, equally apply here.

the old system the *Exceptional Species* would be a continual ng block to the young student, who, for instance, would think of for *Lepidium ruderale,* Except. Sp. 2, in Class DIDYNAMIA; n the *Genus* FRAXINUS a complete distraction would arise. for instance, the student should meet with a *bisexual* flower enus, he would be at a great loss, as the plant is arranged in the LYGAMIA, and it is also *diœcious*; and perhaps another plant of e kind might not be found in this, or to-morrow's, or the next rborisation. All these difficulties are obviated by our preliminary

Orchis tribe, a truly *natural order,* is placed here as Order III, reader feels not so shocked in finding this tribe as an order by an in a class where these mingle with other discordant triba.

alterations made, also, are such, that it is only reversing the arrangement; instead of saying it is Class XX. GYNANDRIA. DIANDRIA, we say it is of the Class DIANDRIA, Order IA; and hence no difficulty can arise to those already nt with the *old system*; and I should be happy if I can assert, new or reformed system, will be found more easy in its application ore natural than the other to the learner; and as such I have it to an enlightened public.

THE

GENERA AND EXCEPTIONAL SPECIES

OF

CLASS II.

DIANDRIA.

TWO STAMINA.

GENERA.

			Page
8.	LIGUS'TRUM.	Privet	22
9.	VERO'NICA.	Speedwell	23
10.	PINGUI'CULA.	Butterwort	24
11.	UTRICULA'RIA.	Water Milfoil	25
12.	SAL'VIA.	Sage	26
13.	VERBE'NA.	Vervain	27
14.	LY'COPUS.	Horehound	28
15.	CIRCÆ'A.	Enchanter's Night-shade	29
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17.	ANTHOXAN'THUM.	Sweet Vernal Grass	31
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23.	LEM'NA.	Duck's Meat	37
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EXCEPTIONAL SPECIES.

1.	CORONO'PUS DI'DYMA.	
2.	LEPI'DIUM RUDERA'LE.	Narrow-leaved Dittander.
3.	FRAX'INUS EXCEL'SIOR.	Common Ash.
4.	SALICOR'NIA HERBA'CEA.	Herbaceous Glass-wort.
[illegible].	SCHŒ'NUS MARISCUS.	Long-rooted Bog-rush.
6.	SCHŒ'NUS ALBUS.	White-flowered Bog-rush.

For these, vide Table III. facing page 21.

Class II. *Diandria.* Order I. *Monogynia.*

GENUS 8.

LIGUSTRUM: *Privet.*

(From LIGO, L. *to bind,* its slender and flexible twigs being used as bands,—the English name from its forming a *retired place,* or *arbour,* being used commonly for that purpose in gardens.)

THE NATURAL CHARACTERS.

I. CALYX. *Perianth* monophyllous, tubular, very small: *Mouth* four-toothed, erect, obtuse (*a*)

II. COROLLA, monopetalous, funnel-shaped. *Tube* cylindrical, longer than the calyx. (*b*) *Border* quadripartite, patent. (*c*) (*c*) *Laciniæ* ovate.

III. STAMINA. *Filaments* two, opposite, simple. (*d*) (*d*) *Anthers* erect, nearly the height of the corolla. (*e*) (*e*)

IV. PISTILLUM. *Germen* roundish. (*f*) *Style* very short. (*g*) *Stigma* bifid, obtuse, rather thickish. (*h*)

V. PERICARP. *Berry* globular, smooth, (*i*) unilocular, (*k*)

VI. SEEDS four, on one side convex, (*l*) on the other angular. (*m*)

THE SECONDARY CHARACTERS.

I. A SHRUB. *Stem,* woody, branched.

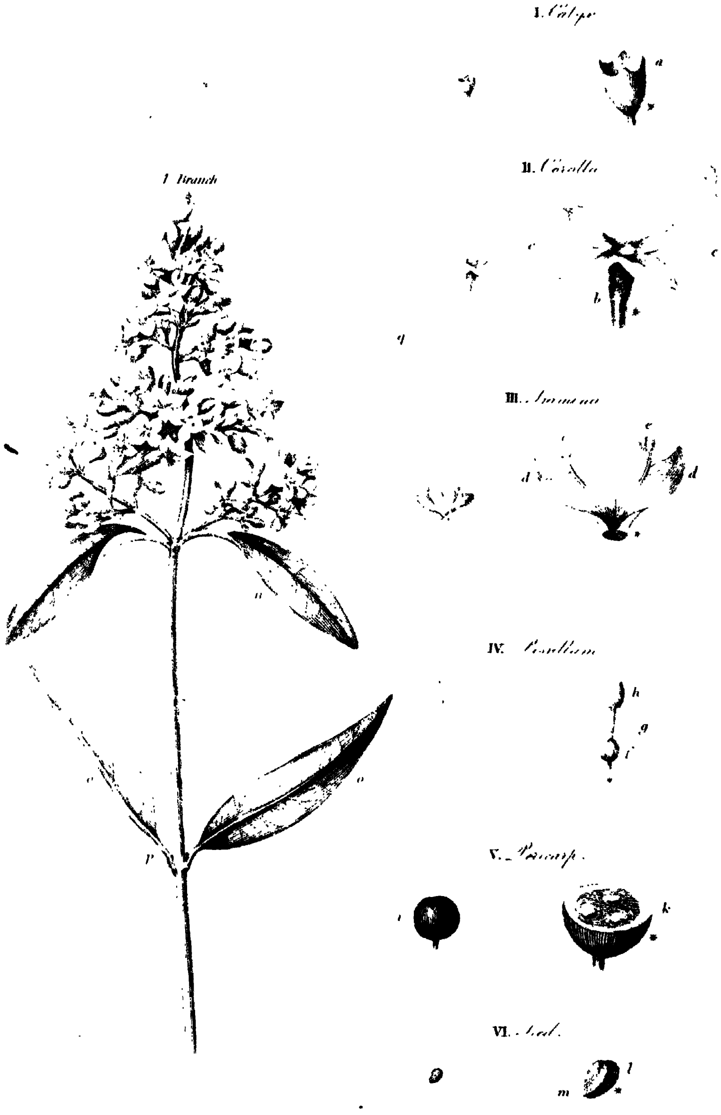
II. LEAVES, ovate-lanceolate, entire, smooth, opposite. (*o*) (*o*) *Petiolus* short. (*p*)

III. FLOWERS, white, in corymbus. (*q*) *Berry* black.

IV. HABITATION, hedges and woods.

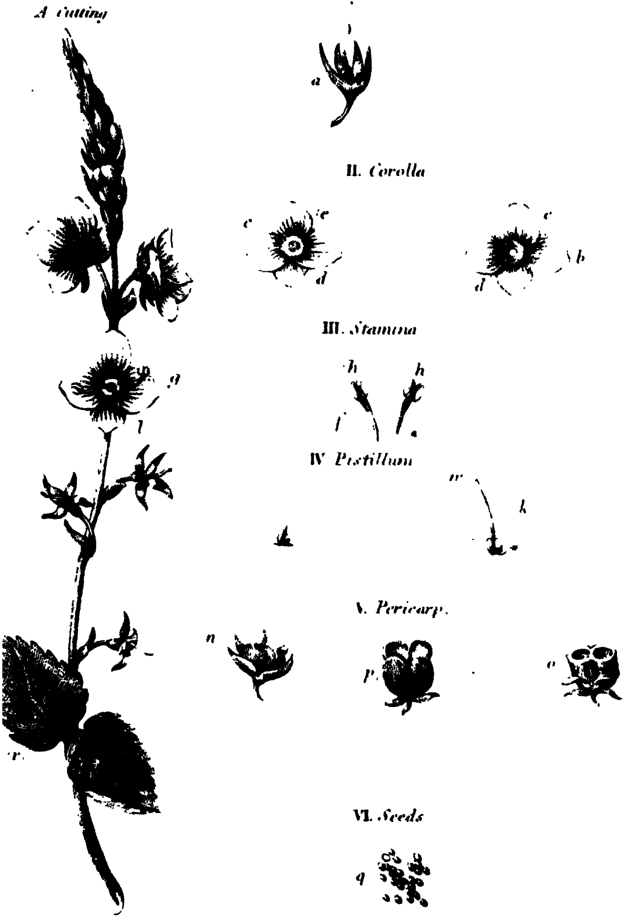
LX. LIGUSTRUM VULGARE.

COMMON PRIVET.



XX. VERONICA CHAMÆDRYS.

GERMANDER SPEEDWELL.



Class II. *Diandria.* Order I. *Monogynia.*

GENUS 9.

VERONICA. *Speedwell.*

(From VERONICA, a princess, who is also a star in the heavens.—The English name from its giving *speed* to the feet; namely, by aiding the lungs.)

THE NATURAL CHARACTERS.

I. CALYX. A *Perianth* quadripartite, persisting: the *laciniæ* lanceolate, acute. (*a*)

II. COROLLA, monopetalled, rotate. *Tube* sometimes nearly the length of the calyx: (*b*) *Border* quadripartite, flat; the *laciniæ* ovate: (*c*) the lowest narrower, (*d*) its opposite broader. (*e*)

III. STAMINA. *Filaments* two, beneath narrower, (*f*) rising, (*g*). *Anthers* oblong. (*h*) (*h*)

IV. PISTILLUM. *Germen* compressed. (*i*) *Style* filiform, length of the stamina, (*k*) declined. (*l*) *Stigma* simple. (*m*)

V. PERICARP. *Capsule* obcordate, compressed at the apex, (*n*) bilocular, (*o*) quadrivalved. (*p*)

VI. SEEDS many, roundish. (*q*)

THE SECONDARY CHARACTERS.

I. STEM, branchy, erect or repent.

II. LEAVES, opposite, (*r*) ternate, or alternate.

III. FLOWERS, spiked, (*s*) corymbo-racemous, or solitary.

IV. HABITATION, various, most frequent on mountains.

Class II. *Diandria.* Order I. *Monogynia.*

GENUS 10.

PINGUICULA. *Butter-wort.*

From PINGUIS, L. *fat*, because its leaves are like *fat* to the touch.—The English name from the *glossy* or *shining* surface of its leaves, as if smeared with butter; *wort*, meaning plant.)

THE NATURAL CHARACTERS.

I. **CALYX.** *Perianth*, monophyllous, ringent, small, acute, persisting. The upper lip erect, trifid; (*a*) the inferior reflexed bifid. (*b*)

II. **COROLLA**, monopetalous, ringent. The shorter lip bifid, rather obtuse, patent. (*d*) The longer lip straight, obtuse, trifid, supine. (*c*)

III. **NECTARY**, horn-shaped, arising from behind at the base of the petals. (*e*)

IV. **STAMINA.** *Filaments* two, cylindrical, curved, ascending, (*f*) (*f*) shorter than the calyx. *Anthers* roundish. (*g*)

V. **PISTILLUM.** *Germen* round. (*h*) *Style* very short. (*i*) *Stigma* bilabiate. (*k*) The superior *lip* large, reflected, covering the anthers. The inferior *lip* very narrow, erect, bifid, shorter.

VI. **PERICARP.** *Capsule* ovate, compressed at the apex, (*l*) unilocular. (*m*)

VII. **SEEDS**, many, cylindrical. (*n*) The *Receptacle* free. (*o*)

THE SECONDARY CHARACTERS.

I. **STEM**, a scape, one-flowered. (*p*)

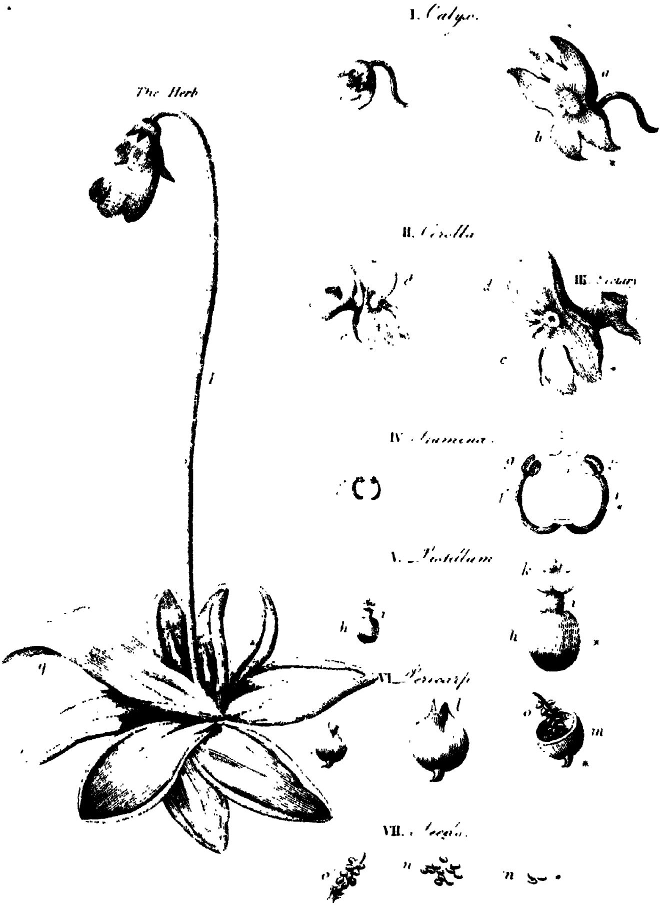
II. **LEAVES**, oval, simple, radical, covered with soft hairs, secreting a glutinous liquor.

III. **FLOWERS**, terminal, (*q*) light blue.

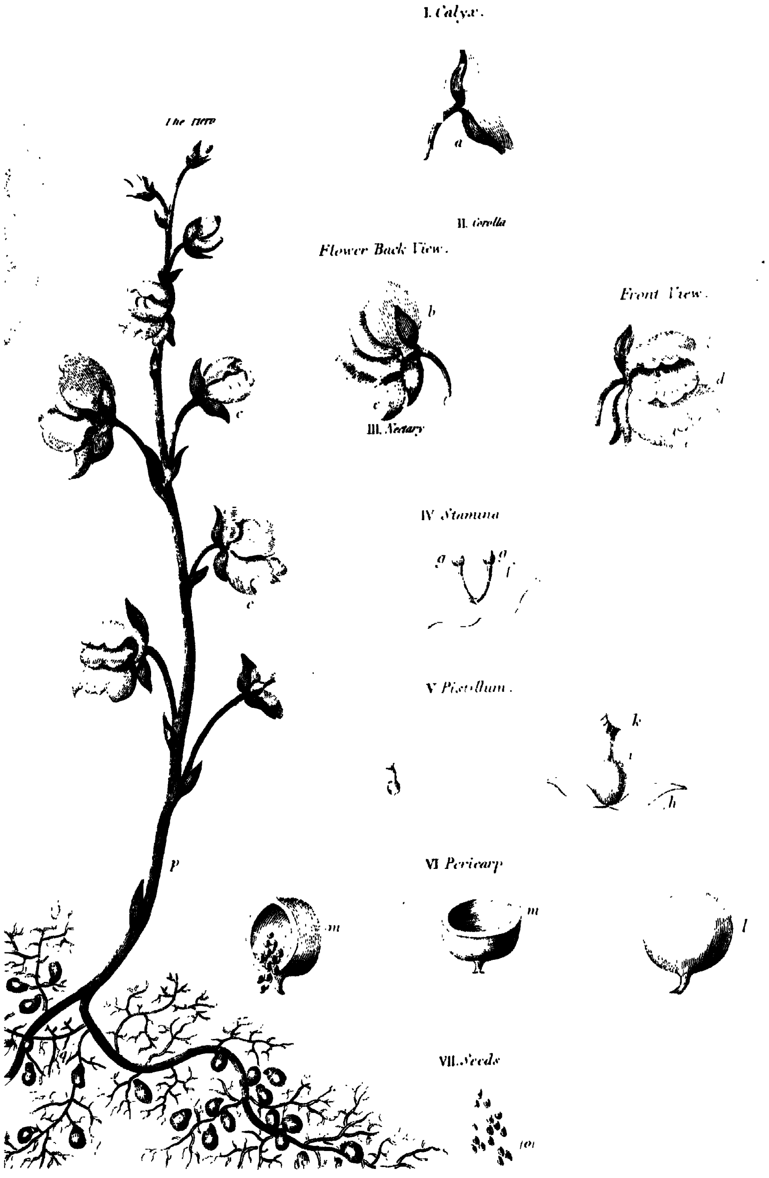
IV. **HABITATION**, in marshes.

Ex. PINGUICULA VULGARIS.

COMMON BUTTER-WORT.



COMMON BLADDER WORT.



Class II. *Diandria.* Order I. *Monogynia.*

GENUS 11.

UTRICULARIA. *Bladder-wort.*

(From UTER, L, *a bottle,* from the leaves immersed in water being replete with *bladders.*—The English name from the same consideration.)

THE NATURAL CHARACTERS.

I. CALYX. *Perianth* diphyllous: (*a*) (*a*) the leaflets ovate, concave, small, deciduous.

II. COROLLA, monopetalous, ringent. Superior *lip* flat, obtuse, erect, (*b*) The inferior *lip* ſarger, flat, trifid. (*c*) *Palate* heart-shaped, somewhat prominent between the lips. (*d*)

III. NECTARY horn-shaped, produced from the base of the petal. (*e*)

IV. STAMINA. *Filaments* two, incurved. (*f*) *Anthers* small, coherent. (*g*) (*g*)

V. PISTILLUM. *Germen* round. (*h*) *Style* filiform, the length of the calyx. (*i*) *Stigma* conical. (*k*)

VI. PERICARP. *Capsule* globular, large, (*l*) one-celled. (*m*)

VII. SEEDS, many. (*o*)

THE SECONDARY CHARACTERS.

I. STEM, branchy, immersed in water, throwing out several SCAPES, garnished with eight or nine flowers. (*p*)

II. LEAVES, capillary, multifid, covered with a small vesicle, of a reddish colour. (*q*)

III. FLOWERS, a pale-yellow.

IV. HABITATION, in stagnant waters.

Class II. *Diandria.* Order I. *Monogynia.*

GENUS 12.

SALVIA. *Sage.*

(Derived from SALUS, L. *health*; no plant having been more praised as a preservative of health; hence the adage

> Cur moriatur homo ubi salvia crescit in horto?

And again,

> Salvia cum Ruta facient tibi pocula tuta.

The English appellation from its supposed power of making a person *sage*, or wise.)

THE NATURAL CHARACTERS.

I. CALYX. *Perianth* monophyllous, tubular, striated, (*a*) above gradually enlarged, and compressed; the *Mouth* erect, the inferior bidentate. (*b*) (*b*)

II. COROLLA, monopetalous. The *Tube* above enlarged, compressed. The *Border* ringent. The superior *lip* concave, compressed, incurved, emarginate: (*c*) the inferior *lip* broad, trifid: (*d*) the middle lacinia larger, roundish, emarginate. (*e*)

III. STAMINA. *Filaments* four, two short; (*f*) (*f*) to these two are fixed nearly in their middle two other longer filaments, transversely; at the lower extremity are placed two *glands*; (*g*) (*g*) at the upper extremity of the longer filaments the *anthers*. (*h*) (*h*)

IV. PISTILLUM. *Germen* quadrifid. (*i*) *Style* filiform, very long, in the direction of the stamina. (*k*) *Stigma* bifid. (*l*)

V. PERICARP, none. The *Calyx* slightly conniving, having the seeds in its bosom. (*m*)

VI. SEEDS, four, roundish. (*n*)

THE SECONDARY CHARACTERS.

I. STEM, erect, or procumbent.

II. LEAVES, opposite, entire, or cut, the superior sessile, (*o*) the inferior petioled.

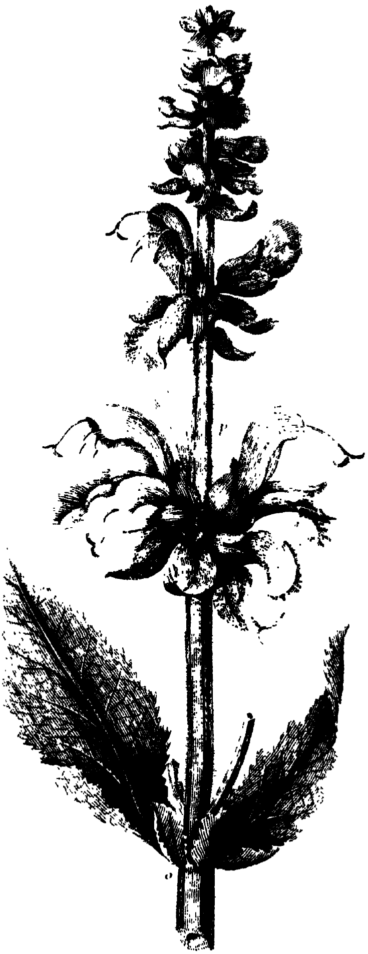
III. FLOWERS, verticillate, (*p*) violet-colour.

IV. HABITATION, dry meadows and hills.

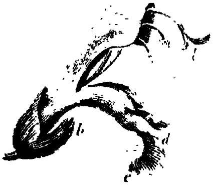
Ex. SALVIA PRATENSIS.

MEADOW SAGE.

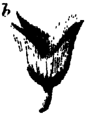
A Cutting.



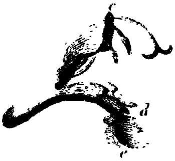
A Flower.



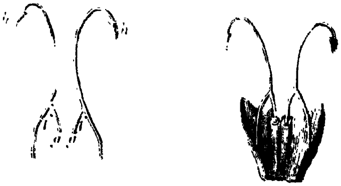
I. Calyx.



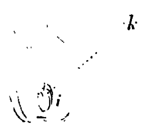
II. Corolla.



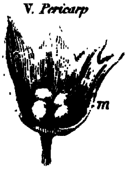
III. Stamina.



IV. Pistillum.



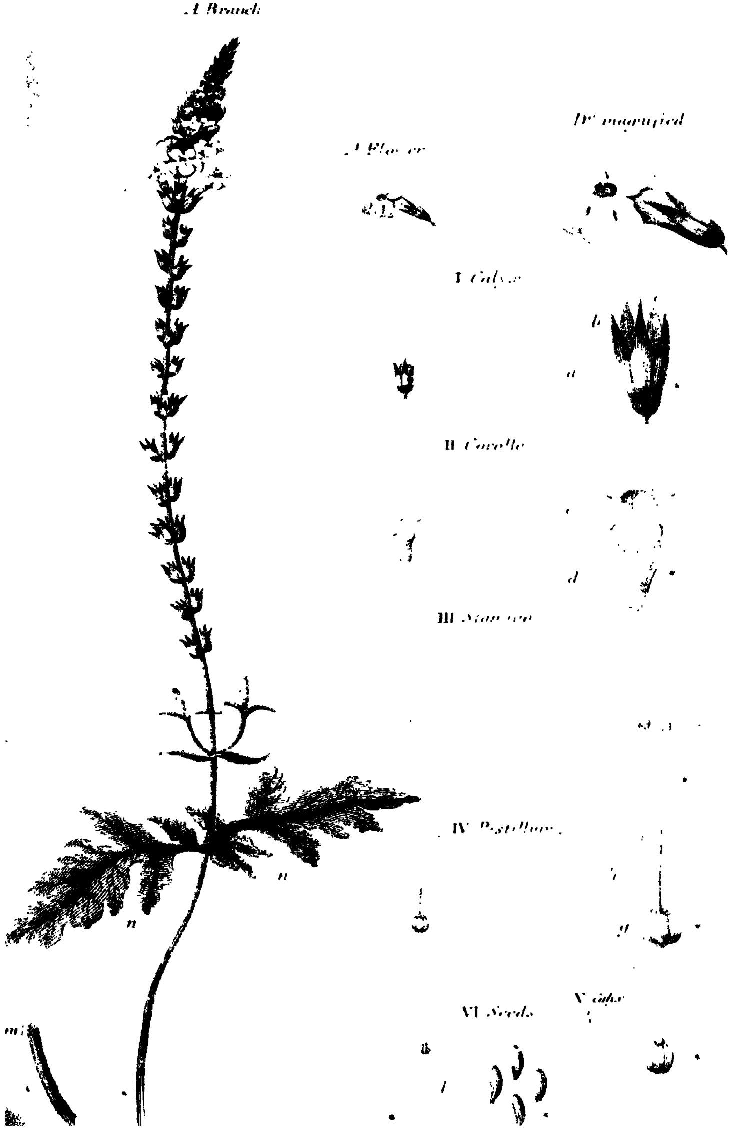
V. Pericarp.



VI. Seeds.

Ex. VERBENA COMMUNIS

OFFICINAL VERVAIN.



Class II. *Diandria.* Order I. *Monogynia.*

GENUS 13.

VERBENA. *Vervain.*

(Pliny says, Herba nulla Romana nobilitatis plus habet quam *Hierabotane.* Nostri *Verbenam* vocant. Hæc est, quam legatos ad hostes indicavimus. Hæc Jovis mensa verritur; domus purgantur, lustranturque.—*Hierabotane* is from *iera,* G. sacred, and *botane,* G. an herb. *Verbena* is derived from this compound Greek word, and signifies holy-herb.—Our English appellation *Vervain* is from the Latin.)

THE NATURAL CHARACTERS.

I. Calyx. A *Perianth* monophyllous, angular, tubular, (*a*) linear, five-toothed. (*b*) The fifth *tooth* truncated, (*c*) persisting.

II. Corolla, monopetalous, unequal. *Tube* cylindrical, straight, length of the calyx, presently dilated, incurved. (*d*) The *border* spreading, half-five-cleft, the *laciniæ* rounded, nearly equal. (*e*)

III. Stamina. *Filaments* (four) setaceous, very short, concealed within the tube of the corolla, of which two are shorter than the others. *Anthers* incurved, as many as the filaments, or only *two.* (*f*)

IV. Pistillum. *Germen* four-cornered.(*g*) *Style* simple, filiform, the length of the tube.(*h*) *Stigma* obtuse.(*i*)

V. Pericarp, very slender, and scarcely manifest, or not existing. *Calyx* containing the seeds. (*k*)

VI. Seeds, two, or four, oblong. (*l*)

THE SECONDARY CHARACTERS.

I. Stem, upright, single, branchy, quadrangular. (*m*)

II. Leaves, opposite, multifid. (*n*) (*n*)

III. Flowers, small, of a light purple.

IV. Habitation, in dry meadows and road-sides.

Class II. *Diandria.* Order I. *Monogynia.*

GENUS 14.

LYCOPUS. *Gypsy-wort.*

(From LUKOS, G. a *wolf*, and POUS, G. *foot*, the leaves being thought to resemble the *foot* of that animal,—and the English name is from its juice being employed by *gypsies* to give them a dark colour, and the word *wort* is Saxon, meaning *plant.*)

THE NATURAL CHARACTERS.

I. CALYX. A *Perianth* monophyllous, tubular, (*a*) semiquinquefid; the *laciniæ* narrow, acute. (*b*)

II. COROLLA, monopetalous, unequal. *Tube* cylindric, the length of the calyx. (*c*) *Border* quadrifid, obtuse, spreading: (*d*) the *laciniæ* nearly equal; the superior broader, emarginate; (*e*) the inferior ones less so.

III. STAMINA. *Filaments* two, nearly the length of the corolla, inclined towards its superior segment. (*f*) *Anthers* small. (*g*)

IV. PISTILLUM. *Germen* quadrifid. (*h*) *Style* filiform, straight, length of the stamina. (*i*) *Stigma* bifid, reflexed. (*k*)

V. PERICARP none. *Calyx* containing the seeds in its bosom. (*l*)

VI. SEEDS four, roundish. (*m*)

THE SECONDARY CHARACTERS.

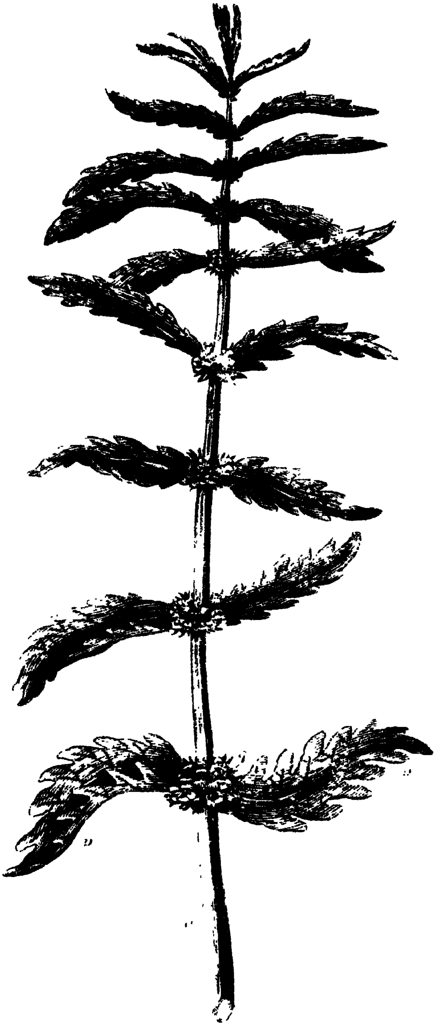
I. STEM, branchy, quadrangular. (*o*)

II. LEAVES, opposite, wrinkled deeply, jagged. (*p*)

III. FLOWERS, axillary, verticillate, (*q*) white, marked in the inside with purple spots.

IV. HABITATION, on the banks of rivers.

A Branch.



A Flower the natural size.

D°. Magnified.

I Calyx.

II Corolla

III.. Stamina

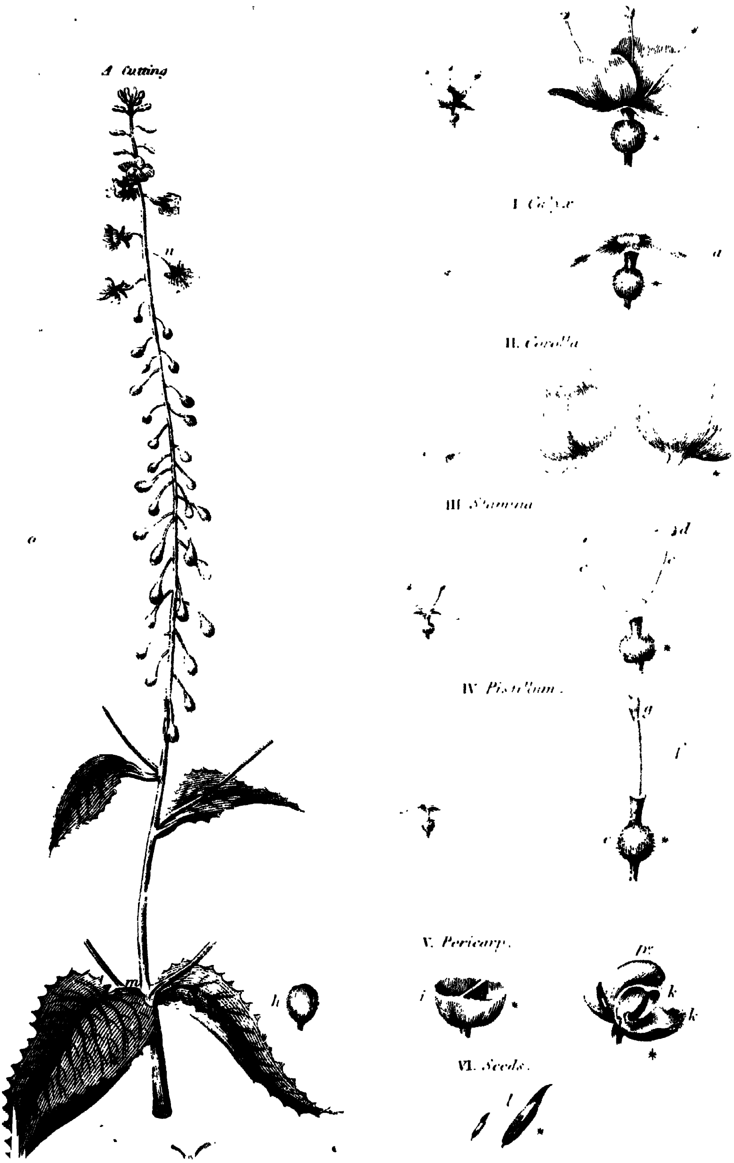
IV Pistillum

V Calyx matured of Seeds

VI. Seeds

Ex. CIRCÆA LUTETIANA.

COMMON ENCHANTER'S NIGHT-SHADE.



Class II. *Diandria.* Order I. *Monogynia.*

GENUS 15.

CIRCÆA. *Enchanter's-Night-shade.*

(From *Circe,* the enchantress, who converted Ulysses's companions into swine.—The English name from its employment in sorcery; and *night-shade* from its similarity of leaf to that plant.)

THE NATURAL CHARACTERS.

I. **Calyx.** A *Perianth* diphyllous; the leaflets ovate, concave, deflected, deciduous. (*a*)

II. **Corolla.** *Petals* two, obcordate, rather shorter than the calyx, patent, equal. (*b*)

III. **Stamina.** *Filaments* two, capillary, erect, the length of the calyx. (*c*) (*c*) *Anthers* roundish. (*d*)

IV. **Pistillum.** *Germen* pear-shaped, beneath. (*e*) *Style* filiform, the length of the stamina. (*f*) *Stigma* obtuse, emarginate. (*g*)

V. **Pericarp.** *Capsule* pear-shaped, ovate, trifid, (*h*) bilocular, (*i*) bivalved, (*k*) (*k*) gaping from the base towards the apex.

VI. **Seeds,** solitary, oblong, narrower below. (*l*)

THE SECONDARY CHARACTERS.

I. **Stem,** erect or ascending, branchy.

II. **Leaves,** opposite, ovate, or heart-shaped, (*m*) pubescent or smooth.

III. **Flowers,** white, or reddish, on peduncles, (*n*) in spikes. (*o*)

IV. **Habitation,** in moist and shady places.

Class II. *Diandria.* Order I. *Monogynia.*

GENUS 16.

ANTHOXANTHUM. *Sweet-Vernal-Grass.*

(From ANTHOS, G. *a flower,* and ZANTHOS, G. *yellow,* from the yellow appearance of its spike;—and the English from this grass giving odour to hay, being that grass which smells so delightfully, and as coming early.)

THE NATURAL CHARACTERS.

I. CALYX. A *Glume* bearing one flower, bivalved; (*a*) (*a*) the valves ovate, acuminate, concave, the inner one largest. (*b*)

II. COROLLA. *Glume* one-flowered, bivalved, (*c*) (*c*) length of the larger valve of the calyx, both valves sending out an arista from the lower part of their back, (*d*) (*d*) one arista becomes geniculate. (*e*)

III. NECTARY, diphyllous, very slender, cylindric, the leaflets, subovate, embracing. (*f*) (*f*)

IV. STAMINA. *Filaments* two, capillary, very long. (*g*) (*g*) *Anthers* both ends bifurcate. (*h*) (*h*)

V. PISTILLUM. *Germen* oblong. (*i*) *Styles* two, filiform. (*k*) (*k*) *Stigma* simple. (*l*) (*l*)

VI. PERICARP. *Glume* of the corolla, and the leaflets of the nectary (*m*) (*n*)—adhering to the seed.

VII. SEED, one, on both ends acuminate, somewhat columnar. (*o*)

THE SECONDARY CHARACTERS.

I. STEM. A culm, articulate, (*p*) very simple.

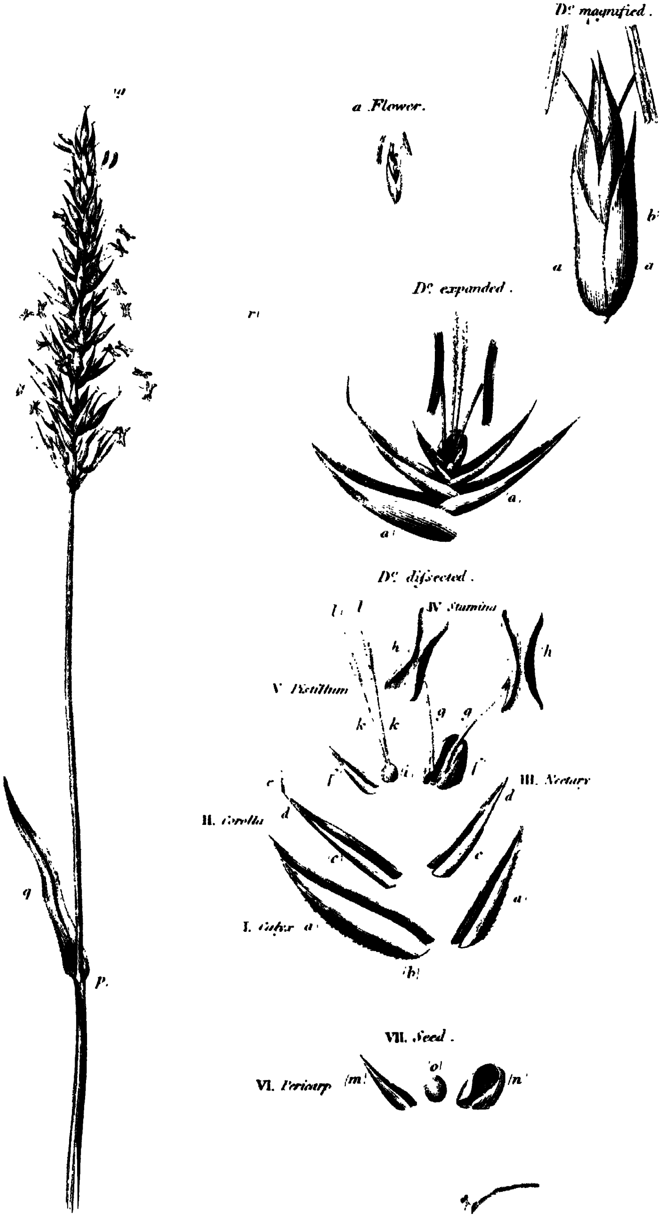
II. LEAVES, small, grass-like. (*q*)

III. FLOWERS, spiked. (*r*) The spike odoriferous after drying, and turning yellow.

IV. HABITATION, in meadows.

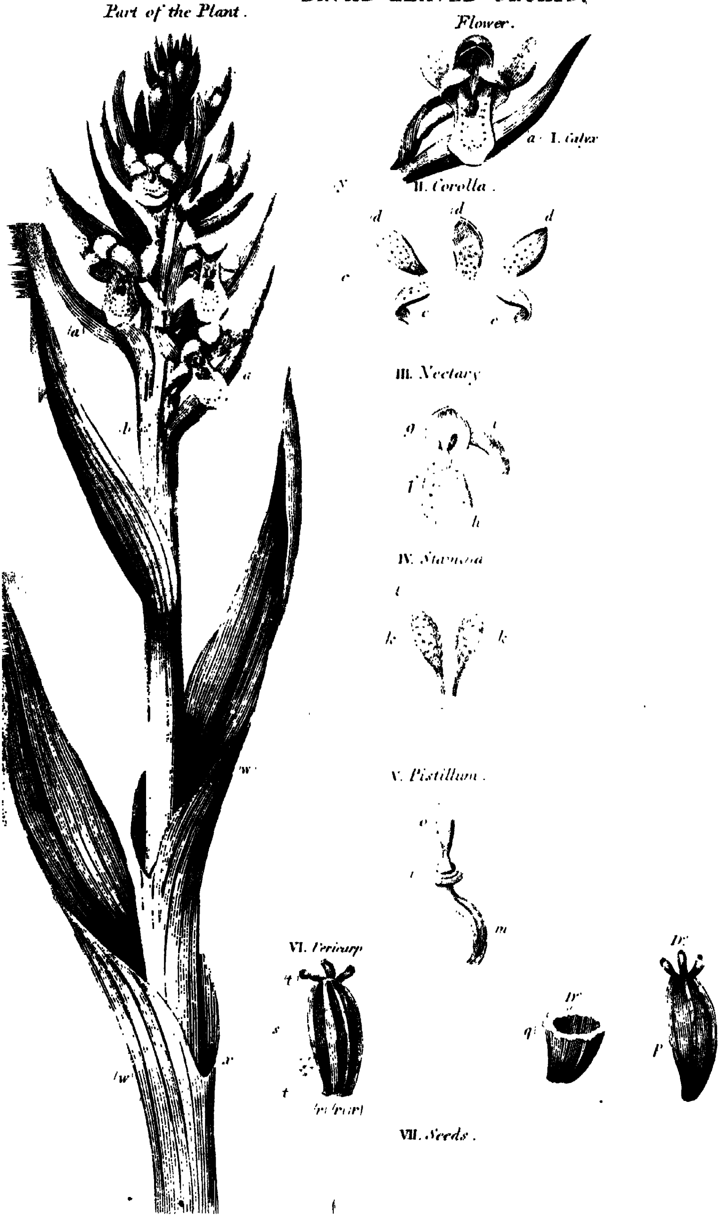
Ex. ANTHOXANTHUM.

SWEET-VERNAL-GRASS.



Ex. ORCHIS LATIFOLIA,

BROAD LEAVED ORCHIS.



Class II. *Diandria.* Order II. *Gynandria.*

GENUS 17.

ORCHIS. *Orchis.*

(From ORCHIS, G. *an olive berry*; the roots of this tribe being often found round, so as to resemble this fruit.—No English generic word.)

THE NATURAL CHARACTERS.

I. CALYX. *Spathes* scattered.(*a*) (*a*) (*a*) *Spadix* simple.(*b*) *Perianth* none.

II. COROLLA. *Petals* five, (*c*) the *three* exterior, (*d*) (*d*) (*d*) and the *two* interior, (*e*) (*e*) rising above so as to form an helmet.

III. NECTARY monophyllous, (*f*) affixed to the receptacle by the inferior claw, betwixt the division of the petals. The *superior lip* erect, very short; (*g*) the *inferior* large, spreading, broad. (*h*) The *tube* behind, horn-ſhaped, nodding. (*i*)

IV. STAMINA. *Filaments* two, very slender, sitting upon the pistillum. (*k*) (*k*). *Anthers* obovate, erect, covered by a bilocular folding of the superior lip of the nectary. (*l*)

V. PISTILLUM. *Germen* oblong, twisted, beneath. (*m*) *Style* growing to the superior lip of the nectary, very short. (*n*) *Stigma* compressed, obtuse. (*o*)

VI. PERICARP. A *Capsule*, oblong, (*p*) unilocular, (*q*) three-keeled, (*r*) (*r*) (*r*) opening in three directions under the keels, (*s*) cohering at the apex and base. (*t*) (*t*)

VII. SEEDS numerous, very small, like saw-dust. (*v*)

THE SECONDARY CHARACTERS.

I. STEM, herbaceous, simple.

II. LEAVES, alternate, (*w*) (*w*) sheathy, (*x*) entire.

III. FLOWER, terminal, spiked. (*y*)

IV. HABITATION, various, most frequent in marshy grounds.

Class II. *Diandria.* Order II. *Gynandria.*

GENUS 18.

SATYRIUM. *Satyrion.*

(L. from its *grotesque form,* resembling in drollery a *Satyr.* Others would derive this and the *Orchis* from different considerations, than those delivered; but I have preferred the present derivations.—The English name is the Latin anglicized.)

THE NATURAL CHARACTERS.

I. Calyx. *Spatha* scattered. (*a*) (*a*) *Spadix* simple. (*b*) *Perianth* none.

II. Corolla. *Petals* five, ovate-oblong; *three* exterior; (*c*) (*c*) (*c*) *two* interior (*d*) (*d*) conniving above into an helmet.

III. Nectary monophyllous, (*e*) annexed to the receptacle by the inferior side between the division of the petals. The *superior lip* erect, very short. (*d*) The *inferior lip* flat, pendulous, (*e*) with a bag-like appearance arising from behind at the base. (*f*)

IV. Stamina. *Filaments* two, very slender, very short, placed upon the pistillum. (*g*) (*g*) *Anthers* obovate, (*h*) covered by a bilocular duplicature of the superior lip of the nectary. (*i*)

V. Pistillum. *Germen* oblong, twisted, beneath. (*k*) *Style* adhering to the superior lip of the nectary, very short. *Stigma* compressed, obtuse. (*l*)

VI. Pericarp. A *Capsule* oblong, (*m*) unilocular, (*n*) three-keeled, (*o*) (*o*) (*o*) gaping in three directions under the keels, (*p*) cohering at the apex and base. (*q*) (*q*)

VII. Seeds numerous, very small, saw-dust like. (*r*)

THE SECONDARY CHARACTERS.

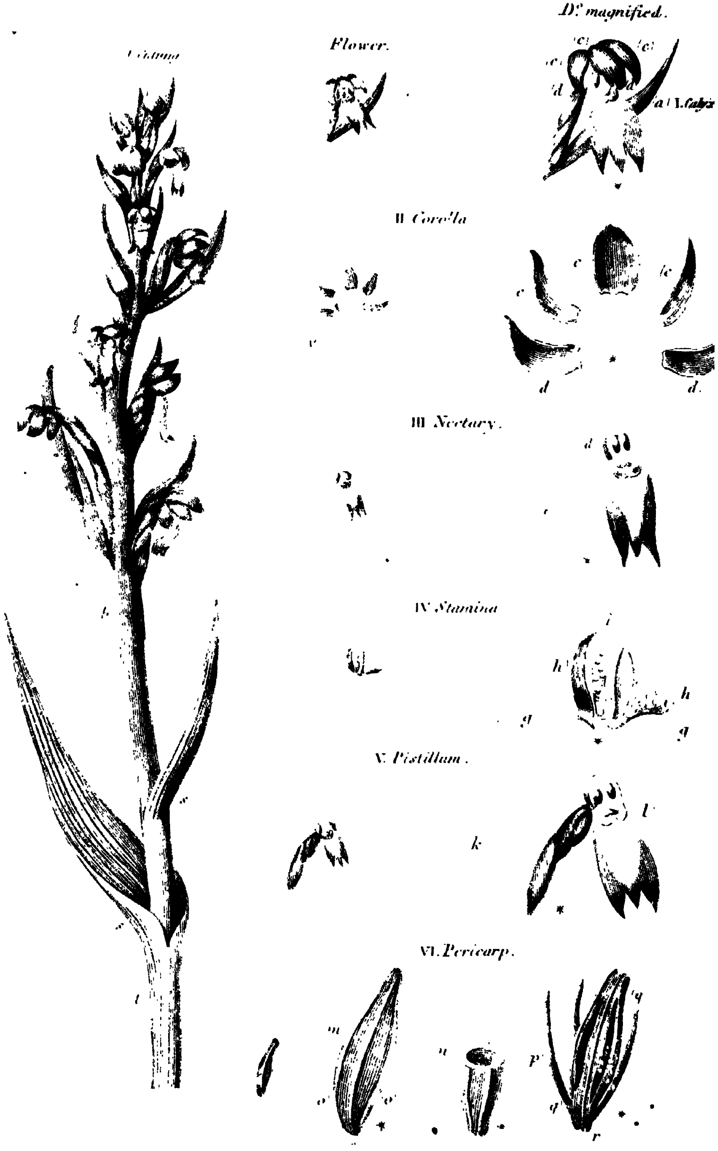
I. Stem, herbaceous, simple.

II. Leaves, alternate, (*s*) (*s*) vaginant, (*t*) entire.

III. Flowers, terminal, spiked. (*v*)

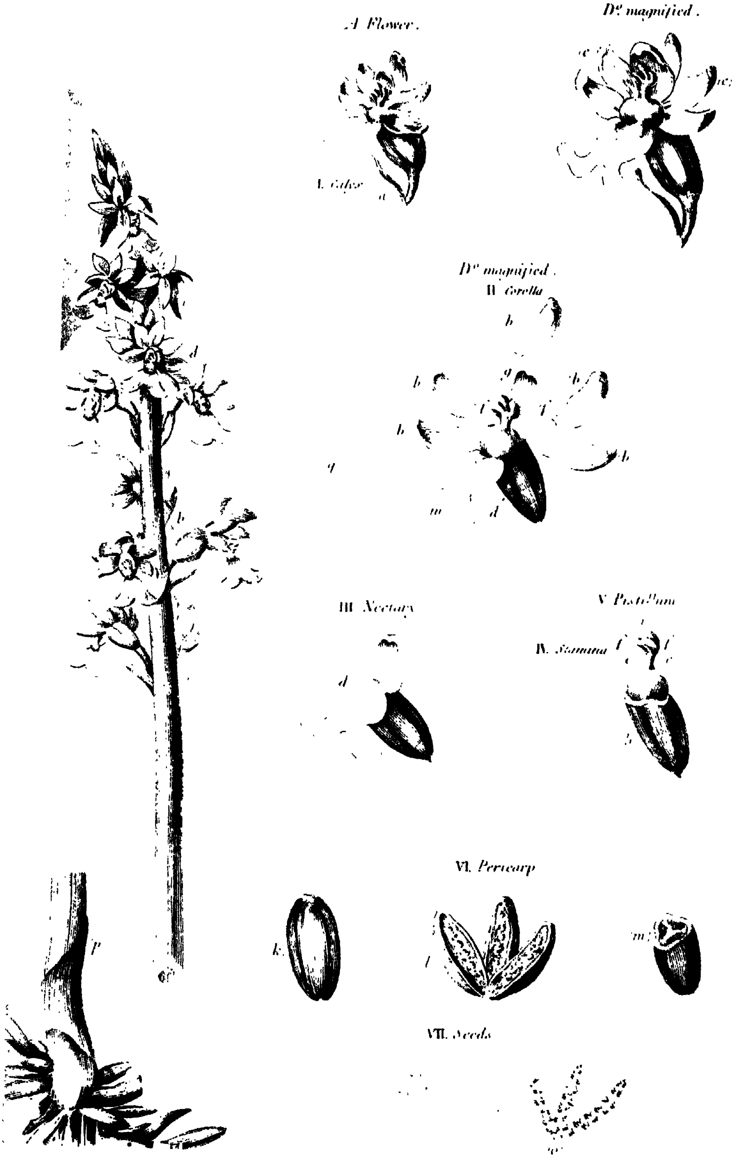
V. Habitation, various.

Ex. SATYRIUM VIRIDE.
GREEN SATYRION.



Ex. OPHRYS NIDUS-AVIS.

BIRD'S-NEST OPHRYS.



Class II. *Diandria.* Order II. *Gynandria.*

GENUS 19.

OPHRYS. *Ophrys.*

(From OPHRUS, G. the *eye-brow*, from its corolla leaves hanging over like the eye-brow.—No English generic word.)

THE NATURAL CHARACTERS.

I. CALYX. *Spatha* scattered. (*a* (*a*) *Spadix* simple. (*b*) (*b*) *Perianth* none.

II. COROLLA. *Petals* five, oblong, above conniving, equal, (*b*) (*b*) (*b*) (*b*) (*b*) two of which are the outer. (*c*) (*c*)

III. NECTARY longer than the petals, depending, (*d*) behind only keeled.

IV. STAMINA. *Filaments* two, very short, placed upon the pistillum. (*e*) *Anthers* erect, (*f*) (*f*) covered by the inner margin of the nectary. (*g*)

V. PISTILLUM. *Germen* oblong, twisted, beneath. (*h*) *Style* adhering to the interior margin of the nectary. *Stigma* obscure. (*i*)

VI. PERICARP. A *Capsule* subovate, three-cornered, obtuse, striated, (*k*) trivalved, (*l*) unilocular, (*m*) gaping at the keeled angles.

VII. SEEDS, numerous, saw-dust like. (*n*) The *Receptacle* linear, adhering to each valve of the pericarp. (*o*)

THE SECONDARY CHARACTERS.

I. STEM, herbaceous, simple.

II. LEAVES, alternate, entire, vaginant. (*p*)

III. FLOWER, terminal, spiked. (*q*)

IV. HABITATION, in woods and marshes, dry meadows, and chalky grounds.

Class II. *Diandria*. Order I. *Gynandria*.

GENUS 20.

SERAPIAS. *Serapias*.

(From SERAPIAS, G. one of the rustic gods of the Ancients.—The English generic word is the same.)

THE NATURAL CHARACTERS.

I. CALYX. *Spathe* scattered. (*a*) (*a*) *Spadix* simple. (*b*). *Perianth* none.

II. COROLLA. *Petals* five, ovate-oblong, erecto-patulous, above conniving. (*b*) (*b*) (*b*) (*b*) (*b*)

III. NECTARY, length of the petals, hollowed at the vase, honey bearing, ovate, beneath gibbous, trifid, acute: the intermediate heart-shaped, obtuse; the base three-toothed, with a bifid cicatrix. (*c*)

IV. STAMINA. *Filaments* two, very short, placed upon the pistillum. (*d*) *Anthers* erect, placed under the superior lip of the nectary. (*e*)

V. PISTILLUM. *Germen* oblong, twisted, beneath. (*f*) *Style* adhering to the superior lip of the nectary. *Stigma* obscure. (*g*)

VI. PERICARP. *Capsule* obovate, (*h*) obtusely three-cornered, (*i*) (*i*) (*i*) with three adhering keels, trivalved, gaping under the keels, (*k*) unilocular. (*l*)

VII. SEEDS numerous, saw-dust like, (*m*) The *Receptacle* linear, adhering to each valve of the pericarp. (*n*)

THE SECONDARY CHARACTERS.

I. STEM, herbaceous, simple.

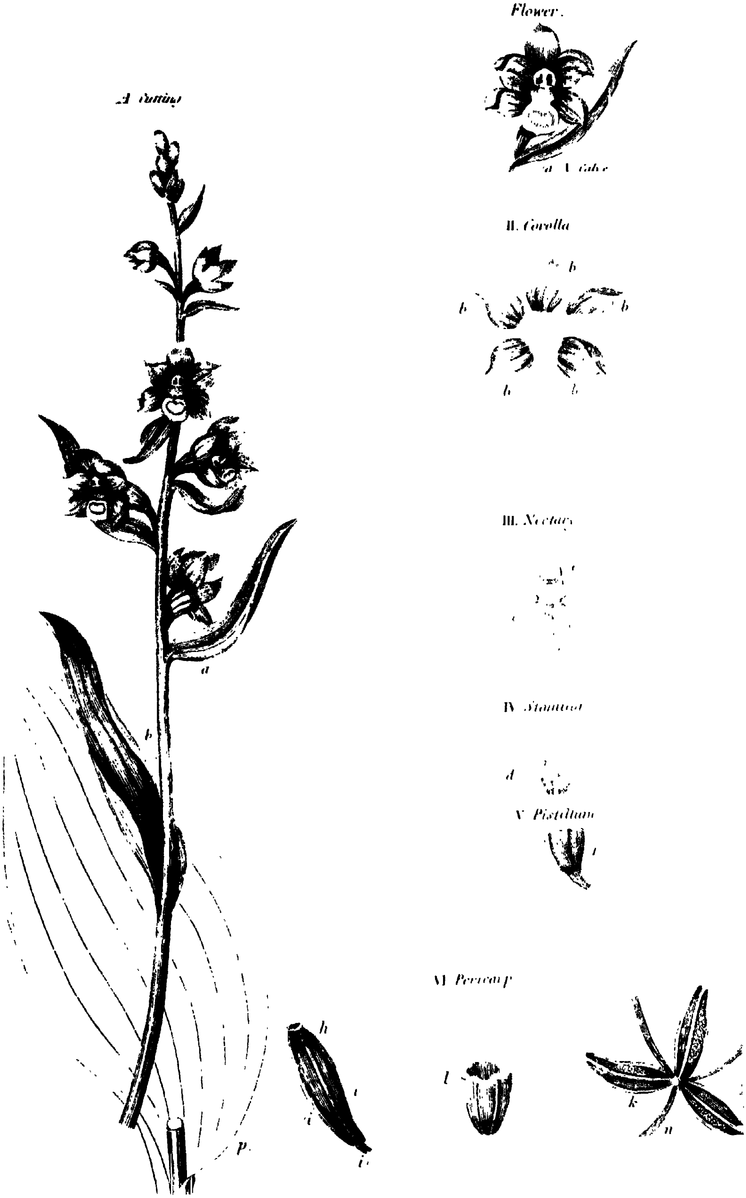
II. LEAVES, alternate, (*o*) vaginant, (*p*) entire.

III. FLOWERS, terminal, loosely spiked. (*q*)

IV. HABITATION, woods, moors, and heaths.

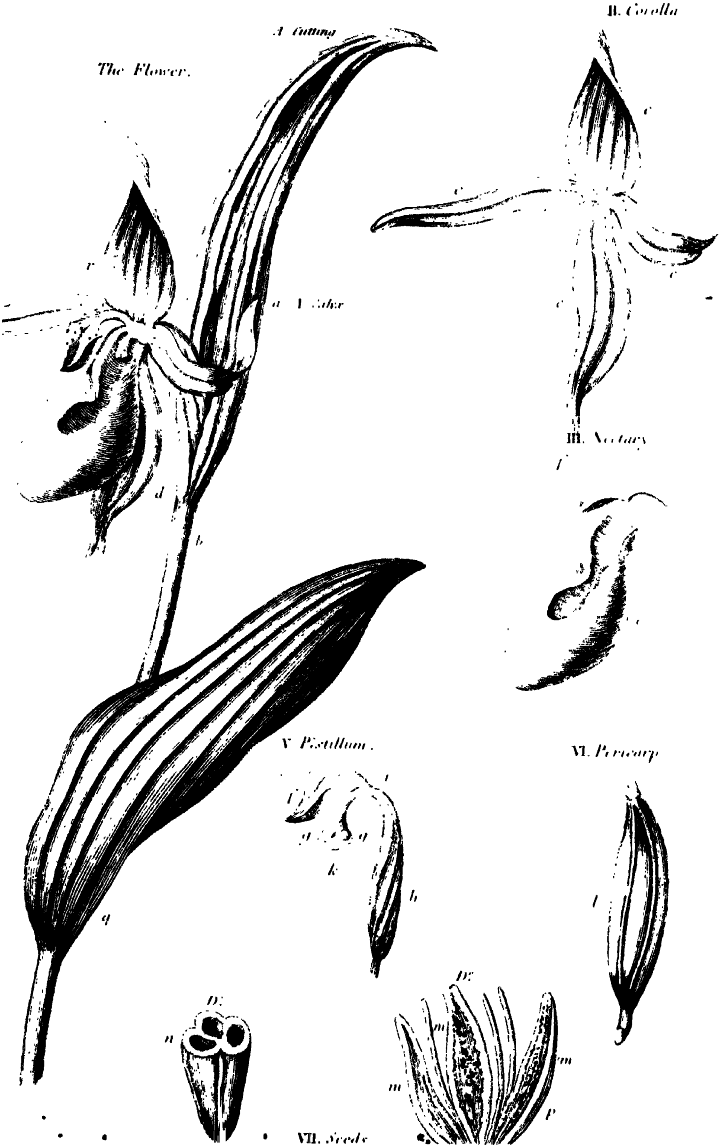
27. SERAPIAS LATIFOLIA.

BROAD LEAVED SERAPIAS.



Ex. CYPRIPEDIUM CALCEOLUS

COMMON LADIES-SLIPPER.



Class II. *Diandria.* Order II. *Gynandria.*

GENUS 21.

CYPRIPEDIUM. *Ladies-Slipper.*

(From KUPRIS, G. *Venus*, and PODION, G. a *Shoe.*—The English name from the Virgin Mary, and from the appearance of the nectary, it being formerly called *My Lady's Slipper.*)

THE NATURAL CHARACTERS.

I. **CALYX.** *Spathes* scattered. (*a*) *Spadix* simple. (*b*) *Perianth* none.

II. **COROLLA** four, very long, spreading. (*c*) (*c*) (*c*) (*c*)

III. **NECTARY** within the inferior petal,(*d*) slipper form, inflated, obtuse, hollow, shorter than the petals, broader. (*e*) *Upper lip* ovate, flat, inflexed, small.

IV. **STAMINA.** *Filaments* two, very short, sitting on the pistil. (*g*) *Anthers* erect, covered by the upper lip of the nectary. (*f*)

V. **PISTILLUM.** *Germen* long, twisted, inferior.(*h*) *Style* very short,(*i*) growing to the upper lip of the nectary. *Stigma* indistinct.(*k*)

VI. **PERICARP.** *Capsule* nearly ovate, three angled, obtuse, striated,(*l*) three-valved, (*m*) (*m*) (*m*) one-celled. (*n*)

VII. **SEEDS** numerous, very small. (*o*) (*o*) *Receptacle* linear, adhering longitudinally to each valve of the pericarp. (*p*)

THE SECONDARY CHARACTERS.

I. **STEM,** herbaceous, simple.

II. **LEAVES** alternate, subvaginant, simple, entire. (*q*)

III. **FLOWERS** terminant, generally solitary,(*r*) of a brownish purple.

IV. **HABITATION.** Woods.

Class II. *Diandria.* Order II. *Gynandria.*

GENUS 22.

MALAXIS. *Malaxis.*

(From MALATTO. G. to *soften*, from its demulcent qualities.—No English name)

THE NATURAL CHARACTERS.

I. **Calyx.** *Spathes* small. (*a*) (*a*) *Perianth* none.

II. **Corolla,** *Petals* five: three outer, two above, one beneath, lanceolate, obtuse, spreading, (*b*) (*b*) (*b*) *two* inner, linear, acute, reflexed above the germen. (*c*) (*c*)

III. **Nectary** in the middle of the corol, less than the petals, concave, with convex margins, (*d*) cordate, acuminate behind, bifid before. (*e*)

IV. **Stamina.** *Anthers* two, ovate, scarcely pedicelled, inserted by the margin in the urn of the pistillum, sitting on two depressions in the bottom. (*f*) (*f*)

V. **Pistillum.** *Germen* pedicelled, somewhat cylindrical beneath. (*g*) *Style* an urn in the middle of the nectary, halved, very short, spreading, bearing the stamina on the posterior margin. *Stigma* before the depressions, near the anthers. (*h*)

VI. **Pericarp.** *Capsule* pedicelled, (*i*) oblong, three-keeled, (*k*) trilocular, (*l*) opening under the keels, cohering at the apex and base. (*m*)

VII. **Seeds,** very minute. (*n*)

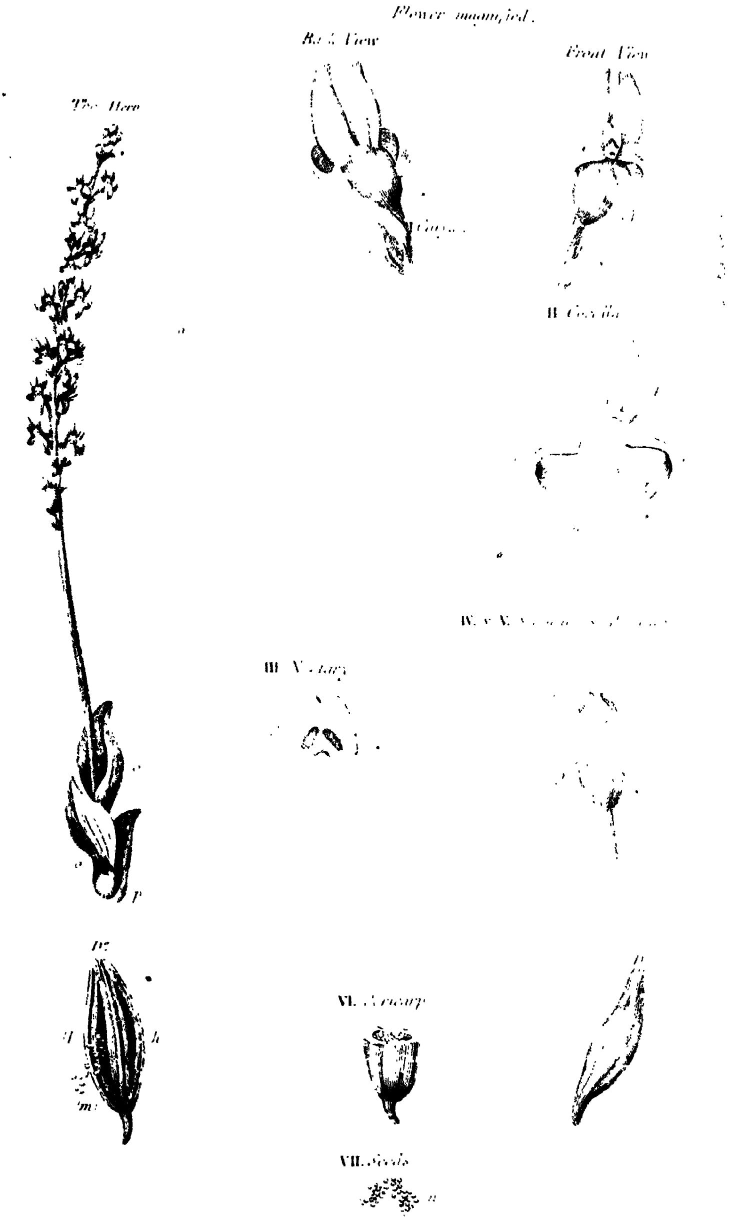
THE SECONDARY CHARACTERS.

I. **Stem,** herbaceous, simple.

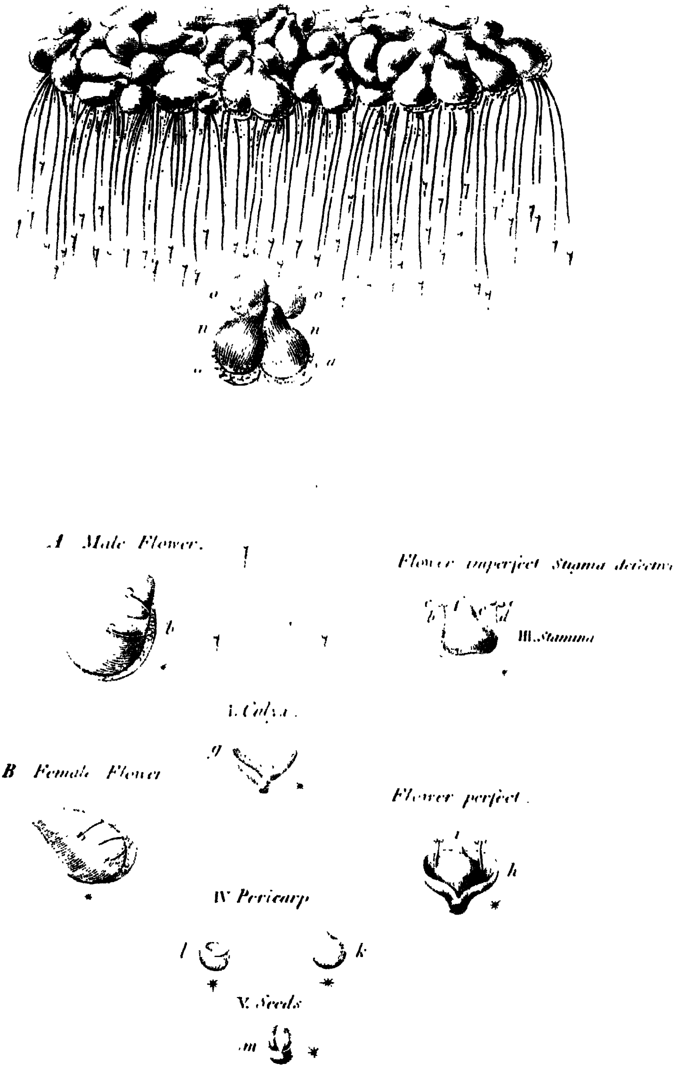
II. **Leaves,** alternate, (*o*) (*o*) vaginant, (*p*) entire.

III. **Flowers** in spikes, (*q*) very small, a dull yellow.

IV. **Habitation,** in turfy bogs.


Flower magnified.
Back View
Front View
The Herb
II Corolla
IV & V
III Nectary
VI Capsule
VII Seeds
a
p
h
m

Ex. LEMNA MINOR.
LESSER DUCKS-MEAT.



Class II. *Diandria*. Order III. *Monœcia*.

GENUS 23.

LEMNA. *Duck's Meat*.

(From LEMNA, G. of Theophrastus;—the English appellation as affording food to Ducks.) *

THE NATURAL CHARACTERS.

MALE FLOWER. (A)

I. CALYX. *Perianth* monophyllous, roundish, gaping at the side, (*a*) dilated obliquely outwards, obtuse, spreading, depressed, large, entire.

II. COROLLA, none.

III. STAMINA. *Filaments* two, subulate, incurved, length of the calyx. (*b*) *Anthers* twin, globose, (*c*) (*c*)

IV. PISTILLUM. *Germen* ovate. (*d*) *Style* short. (*e*) *Stigma* obscure. (*f*)

V. PERICARP abortive.

FEMALE FLOWER. (B)

I. CALYX, as in the other. (*g*)

II. COROLLA, none.

III. PISTILLUM. *Germen* subovate. (*h*) *Style* short, abiding. *Stigma* simple. (*i*)

IV. PERICARP. *Capsule* globular, with a point, (*k*) unilocular. (*l*)

V. SEEDS some, oblong, at both ends acute, nearly the length of the capsule, (*m*) on one side striated.

THE SECONDARY CHARACTERS.

I. STEM, none.

II. LEAVES, flat, suborbicular, in twos, (*n*) (*n*) attached to bladders. (*o*) (*o*)

III. FLOWERS, male or female, at first enclosed within the leaves.

IV. HABITATION, in ponds. The leaves rising in the spring, and sinking underneath the waters in the winter.

---

* By right this plant should fall under the order POLYGAMIA, as the abortive Pistillum is an after consideration. We have suffered it to retain its situation as placed by Linnæus, being scarce ever to be met with in flower.

Class II. *Diandria.* Order IV. *Diœcia.*

GENUS 24.

SALIX. *Willow.*

(From SALIO, L. to leap or spring, from the quickness of its growth.—The English is Saxon.)

THE NATURAL CHARACTERS.

MALE FLOWERS. (A)

I. CALYX. A *common Ament,* oblong, on every side imbricated (*a*) (possessing of an involucrum from the gem) (*b*) each scale uniflorous, oblong, flat, spreading. (*c*) (*c*) (*c*)

II. COROLLA. *Petals* none.

III. NECTARY. A gland cylindric, very small, truncated, honey-bearing in the center of the flower. (*d*) (*d*)

V. STAMINA. *Filaments* two, straight, filiform, longer than the calyx. (*e*) (*e*) (*e*) (*e*) *Anthers* twin, (*i*) quadrilocular. (*k*)

FEMALE FLOWERS. (B)

I. CALYX. An *Amentum* as in the male, and the *scale* similar. (*l*)

II. COROLLA none.

III. PISTILLUM. *Germen* ovate, attenuated into a style scarcely distinct, a little longer than the scales of the calyx, (*m*) *Stigmata,* two, bifid, erect. (*n*) (*n*)

IV. PERICARP. *Capsule* ovato-subulate, (*o*) unilocular, (*p*) bivalved. The *valves* revolute. (*q*)

V. SEEDS numerous, ovate, very small, crowned with a simple hirsute *Pappus.* (*r*)

THE SECONDARY CHARACTERS.

I. STEM, a trunk, branches frutescent.

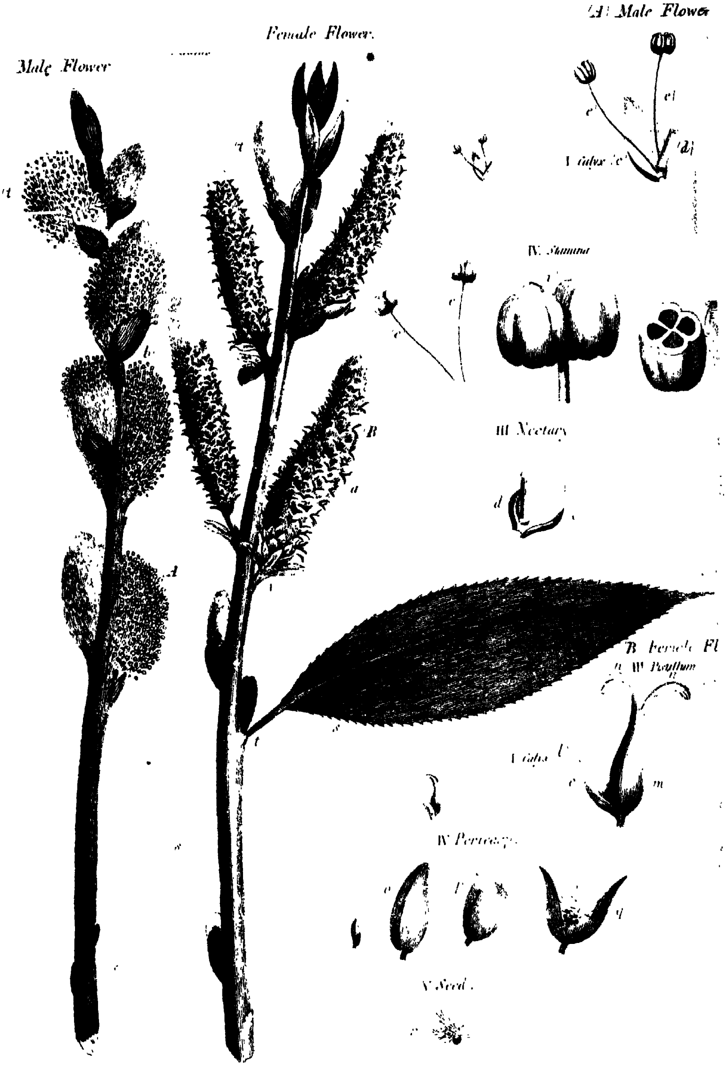
II. Leaves, alternate, (*s*) (*s*) petioled, (*t*) oblong.

III. FLOWERS on branches, terminal, (*t*) (*t*) peduncled. (*v*)

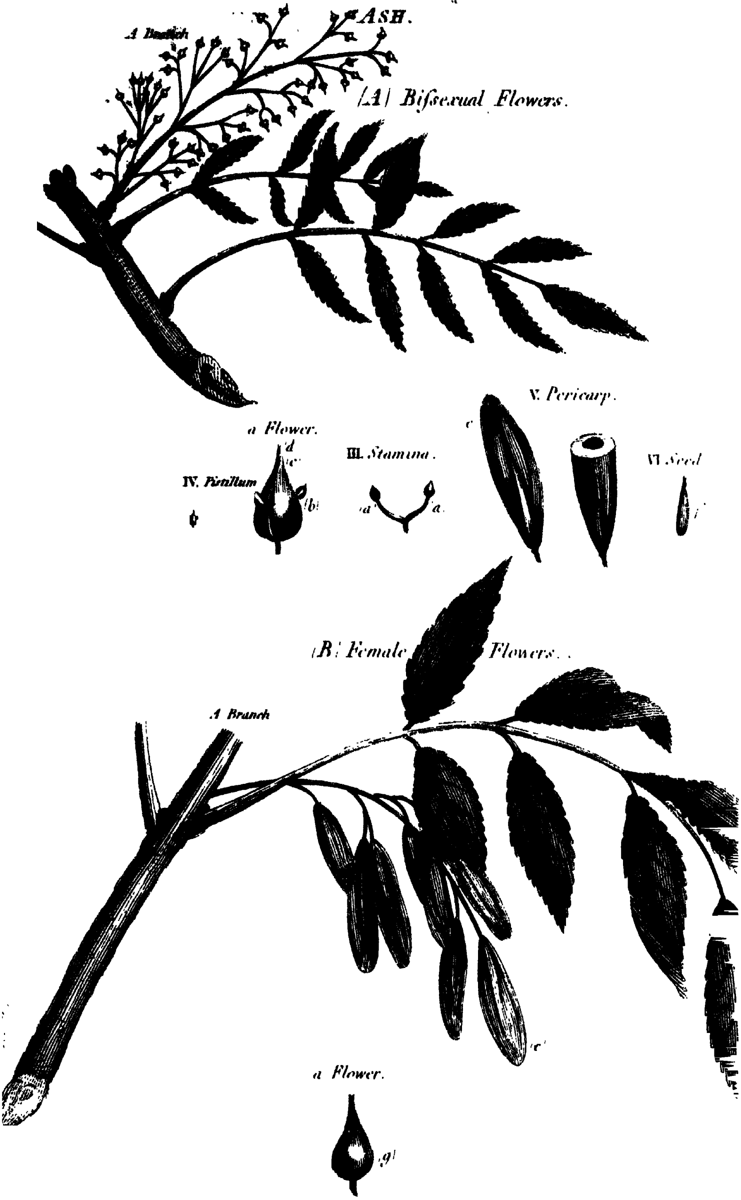
IV. HABITATION, in woods, fields, and by the banks of ponds and rivers.

Ex. SĀLIX FRĀGILIS.

CRACK WILLOW.



Ex. FRAXINUS.


ASH.
A Bunch
(A) Biſsexual Flowers.
a Flower.
d
c
b
IV. Pistillum
III. Stamina.
a
a
V. Pericarp.
c
VI. Seed
f
(B) Female Flowers.
A Branch
c
a Flower.
g

GENUS 25.

FRAXINUS. *Ash.*

(From FRANGERE, L. *to break,* the wood being brittle,—and the English is an old Saxon word.)

THE NATURAL CHARACTERS.

BISSEXUAL FLOWER. (A)

I. CALYX, none, or a *Perianth* monophyllous, quadripartite, erect, acute, small.

II. COROLLA, none, or *Petals,* four, linear, long, acute, erect.

III. STAMINA. *Filaments* two, erect, much shorter than the corolla. (*a*) (*a*)

IV. PISTILLUM. *Germen* ovate, compressed. (*b*) *Style* cylindric, erect. (*c*) *Stigma* rather thick, bifid, (*d*)

V. PERICARP none, except the incrustation of the seed. (*e*)

VI. SEED, lanceolate, compresso-membranous, unilocular. (*f*)

FEMALE FLOWER. (B)

Flower exactly as the other, wanting only the stamina. (*g*)

THE SECONDARY CHARACTERS.

I. STEM, a trunk, branching.

II. LEAVES, oppotite, (*h*) (*h*) pinnate, (*i*) (*i*) ending odd. (*k*)

III. FLOWERS, bissexual, or unisexual.

IV. HABITATION, in woods and open fields.

CLASS III.

TRIANDRIA.

THREE STAMINA.

CI

DISCRIMII

- ler II. DIGYNIA. . .
  - *Calyx* involving one-*flower* . . . .
    - *Calyx* 3-valved . . . .
    - —— 2-valved . . . . .
      - *Cor*
      - ——
  - —————— two-*flowers*. . . . .
    - both perfect. . . . .
      - scatte
      - spiked
    - one barren . . . .
  - —————— many *flowers*. . . . .
    - *Flowers* scattered . . .
      - 3-*flowe*
      - many *f*
    - —— spiked. . . . .
      - *Calyx*, 1
      - —— es.

CLASS

GENERA.	I. CALYX.

THE GENERA AND EXCEPTIONAL SPECIES OF CLASS III.

TRIANDRIA.

THREE STAMINA.

GENERA.

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EXCEPTIONAL SPECIES.

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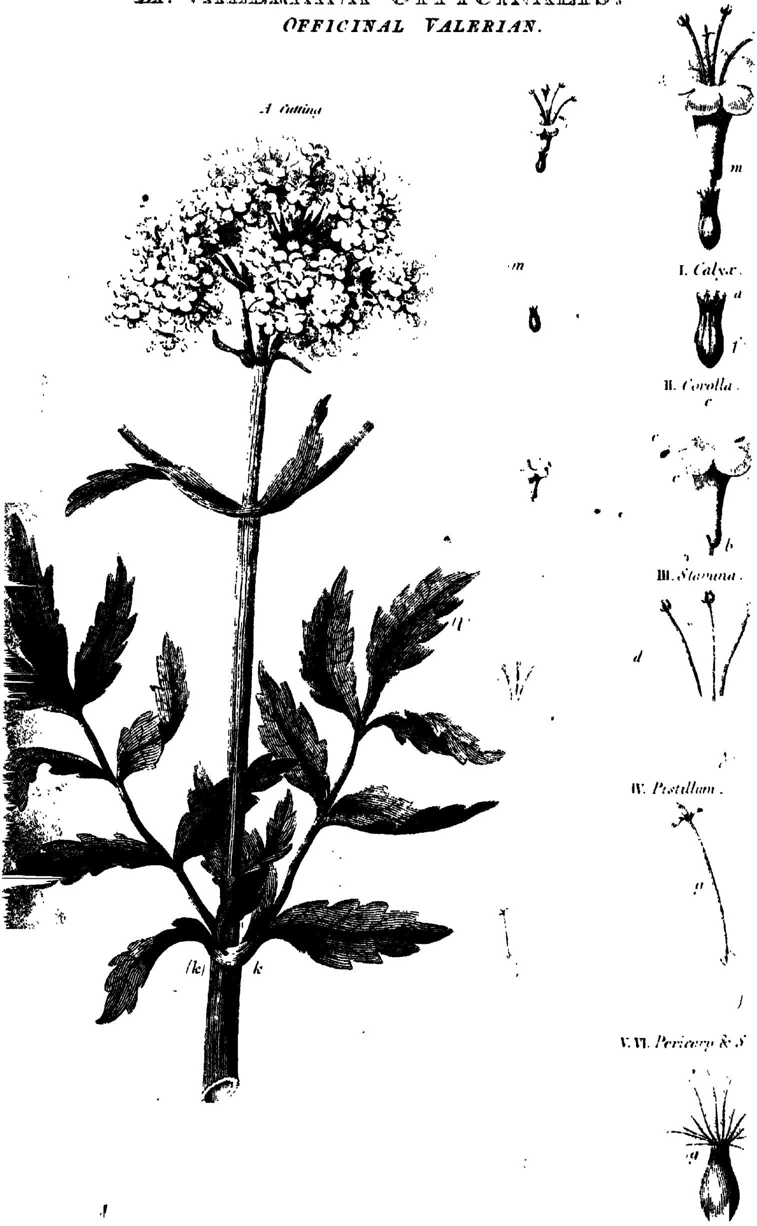
4. MELICA UNIFLORA.	Wood-Melic.
5. DACTYLIS GLOMERATA.	Rough Cock's-foot.
6. TILLÆA MUSCOSA.	Mossy Red-shanks.
7. STELLARIA MEDIA.	Hairy Stick-wort.
8. JUNCUS CONGLOMERATUS.	Round-head-Rush.
9. JUNCUS EFFUSUS.	Common Rush.
10. VALERIANA DIOICA.	Small Valerian.
11. CAREX DIOICA.	Small Segs.
12. SALIX TRIANDRA.	Smooth Willow.
13. BRYONIA DIOICA.	Red-berried Bryony.
14. HORDEUM MURINUM.	Wall-Barley.
15. HORDEUM PRATENSE.	Meadow-Barley.
16. HORDEUM MARITIMUM.	Sea-Barley.

For these, vide Tables V, VI, VII, and VIII.

Ex. VALERIANA OFFICINALIS.

OFFICINAL VALERIAN.



Class III. *Triandria.* Order I. *Monogynia.*

GENUS 26.

VALERIANA. *Valerian.*

(From VALERE, L. *to make strong*, having been early used as a corroborant.—The English from the Latin.)

THE NATURAL CHARACTERS.

I. CALYX scarce perceptible, a margin above the germen. (*a*)

II. COROLLA. *Tube* on the lower side nectariferous, gibbous. (*b*) *Limb* five-cleft. (*c*) (*c*) (*c*) (*c*) (*c*) *Segments* obtuse.

III. STAMINA three, (*d*) or one, subulate, erect, longer than the corol. *Anthers* roundish. (*e*)

IV. PISTILLUM. *Germen* inferior. (*f*) *Style* filiform, as long as the stamina. (*g*) *Stigma* thickish. (*h*)

V. PERICARP, a crust not opening, deciduous, crowned. (*g*)

VI. SEED one, oblong. (*h*)

THE SECONDARY CHARACTERS.

I. STEM, herbaceous, articulate, fistulous, (*i*) simply branched, or dichotomous.

II. LEAVES opposite, (*k*) (*k*) simple, or pinnatifid, (*l*) both in the same species.

III. FLOWERS terminal, in corymbus. (*m*)

IV. HABITATION, old walls, bogs, ditches, meadows, woods, and corn fields.

Class III. *Triandria.* Order I. *Monogynia.*

GENUS 27.

CROCUS. *Crocus.*

(From KROKE, G. a *thread,* because when dried it resembles that figure, and hence the metamorphosis of the boy Crocus, who was in love with Smilax, into this flower. Ovid.—No English word.)

THE NATURAL CHARACTERS.

I. **Calyx.** *Spathe* monophyllous. (*a*) (*a*)

II. **Corolla.** *Tube* simple, very long. (*b*) *Limb* sexpartite, erect. (*c*) *Segments* ovate-oblong, equal.

III. **Stamina.** *Filaments* three, subulate, shorter than the corol, attached to it, (*d*) (*d*) (*d*) *Anthers* sagittate. (*e*) (*e*) (*e*)

IV. **Pistillum.** *Germen* inferior, roundish. (*f*) *Style* filiform, length of the tube. (*g*) *Stigmata* three, (*h*) (*h*) (*h*) convolute, (*i*) ends serrated. (*k*) (*k*) (*k*)

V. **Pericarp.** *Capsule* roundish, three-lobed, (*l*) three-celled, (*m*) three-valved. (*n*)

VI. **Seeds,** several, round. (*o*)

THE SECONDARY CHARACTERS.

I. **Stem,** none, root bulbous. (*p*)

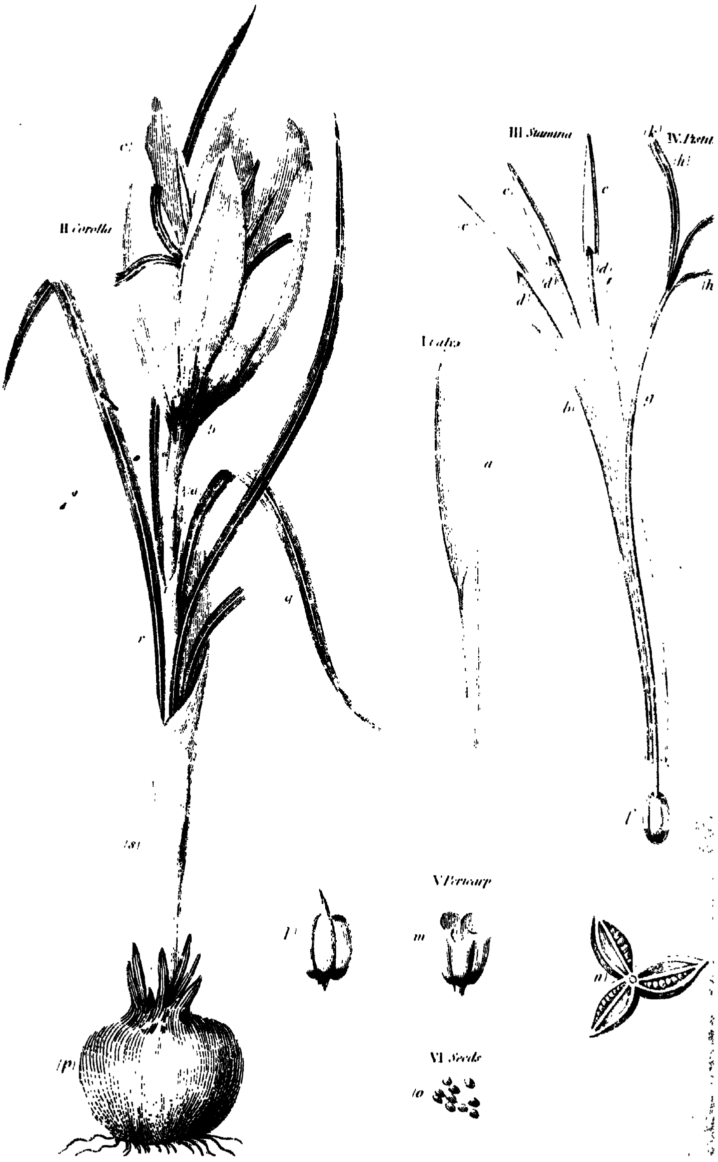
II. **Leaves,** linear, (*q*) subulate, (*r*) vaginant, radical. (*s*)

III. **Flowers,** radical, liliaceous, purple, or yellow.

IV. **Habitation,** in the open fields.

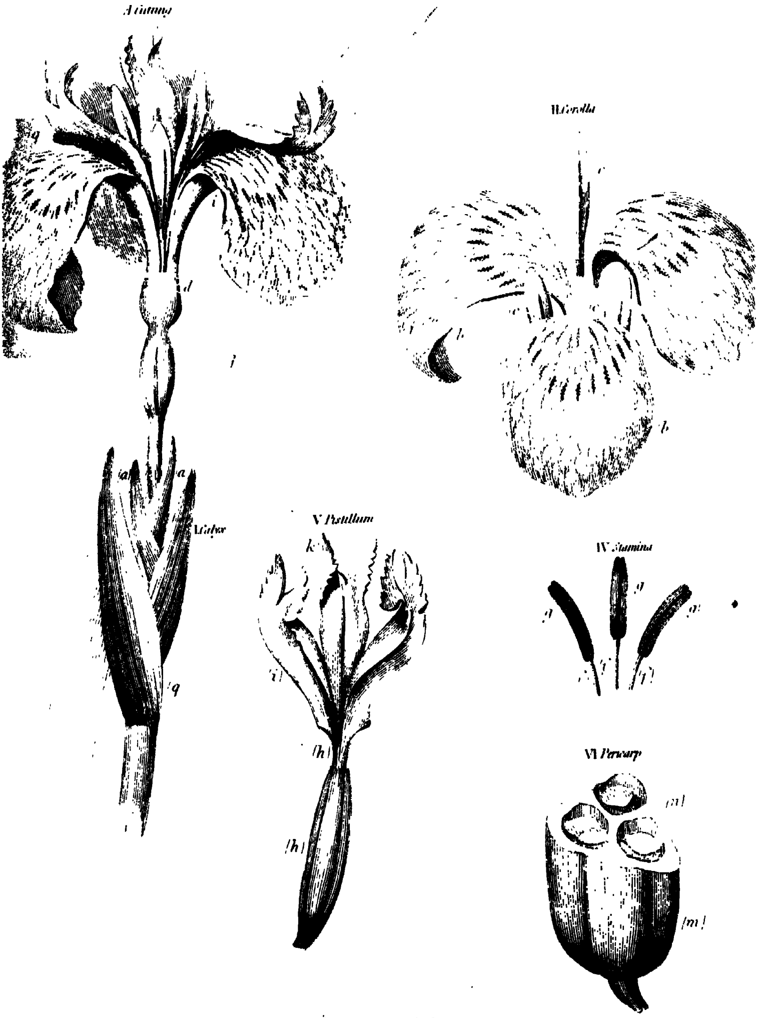
Fx. CROCUS VERNUS.

SPRING CROCUS.



Ex. IRIS PSEUDACORUS

YELLOW FLAG.



Class III. *Triandria.* Order I. *Monogynia.*

GENUS 28.

IRIS. *Flag.*

(From IRIS, G. *the rain-bow,* because of the great variety of its colours in the different species.—The English word is from leaves resembling *flags.*)

THE NATURAL CHARACTERS.

I. CALYX. *Spathe* two-leaved, (*a*) (*a*) separating the flowers.

II. COROLLA sexpartite. *Segments* oblong, obtuse, *three* outer ones reflexed, (*b*) (*b*) (*b*) *three* inner ones erect, more acute, (*c*) (*c*) (*c*) all united by the claws. (*d*)

III. NECTARY, a longitudinal line in the claws and joints of the larger petals; (*e*) frequently villous.

IV. STAMINA. *Filaments* three, subulate, inserted on the claw of the reflexed petals. (*f*) (*f*) (*f*) *Anthers* oblong, straight, depressed, (*g*) (*g*) (*g*) sheltered by the petaliform stigmata. (*i*)

V. PISTILLUM. *Germen* inferior, oblong. (*h*) *Style* simple, very short. (*h*) *Stigmata* very large, petal-form, covering the stamina,(*i*) (*i*) summits bilabiate; upper lip, two-cleft, reflexed; (*k*) inner, less bifid, (*l*) keeled within from the center.

VI. PERICARP inferior, oblong, angular, (*m*) three-celled, three-valved. (*n*)

VII. SEEDS, numerous, large, ovate. (*p*)

THE SECONDARY CHARACTERS.

. STEM, simple, leafy.

I. LEAVES, ensiform, (*q*) alternate, amplexicaul, yellow, or of a dull lead colour.

III. FLOWERS, liliaceous, scattered, terminal. (*r*)

IV. HABITATION, in the waters; one species in groves and thickets.

Class III. *Triandria.* Order I. *Monogynia.*

GENUS 29.

NARDUS. *Mat-grass.*

(From the Greek, being denominated *nardos* by Theophrastus.—The English from its roots *matting* the ground.)

THE NATURAL CHARACTERS.

I. **Calyx**, none.

II. **Corolla** two-valved; outer *valve* lanceolate-linear, long, mucronate, embracing the lesser; (*a*) inner *valve*, less, linear, mucronate. (*b*)

III. **Stamina**, three, capillary, shorter than the corolla. (*c*) *Anthers* oblong. (*d*)

IV. **Pistillum.** *Germen* oblong. (*e*) *Style* one, filiform, long, pubescent. (*f*) *Stigma* simple. (*g*)

V. **Pericarp** none. The *Corolla* adheres to the seed, nor opens. (*h*)

VI. **Seed**, one, straight, linear-oblong, at both ends acuminate, narrower above. (*i*)

THE SECONDARY CHARACTERS.

I. **Stem**, without knots, (*k*) small, slender, numerous. (*l*)

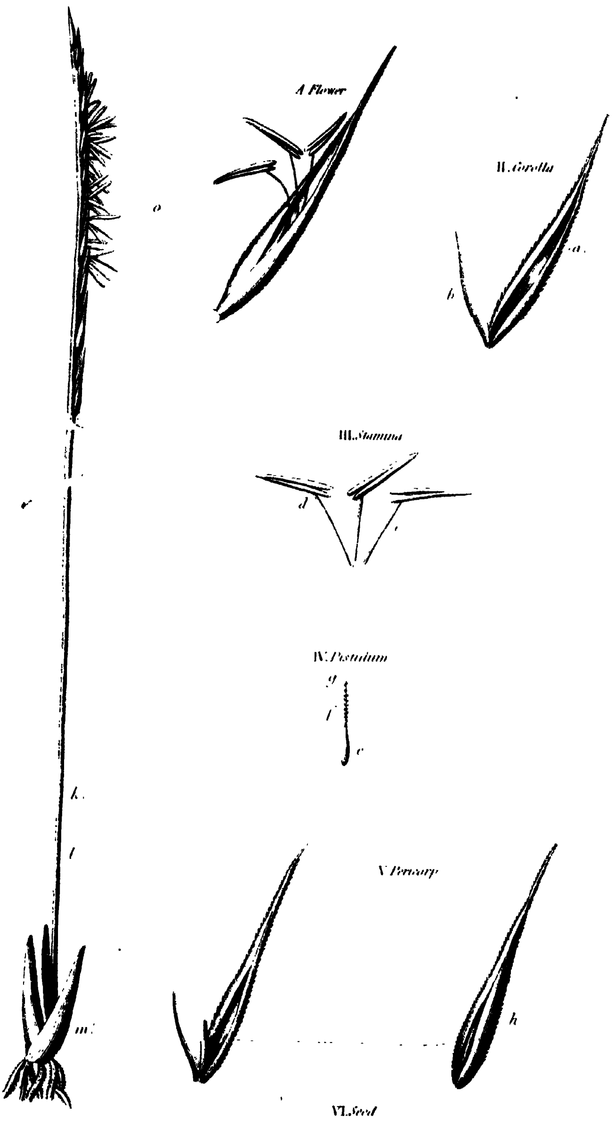
II. **Leaves**, small, narrow, three or four together, (*m*) subglaucous. (*n*)

III. **Flowers**, spiked, (*o*) standing on one side of the stalk, all pointing one way.

IV. **Habitation**, dry pasture and hills.

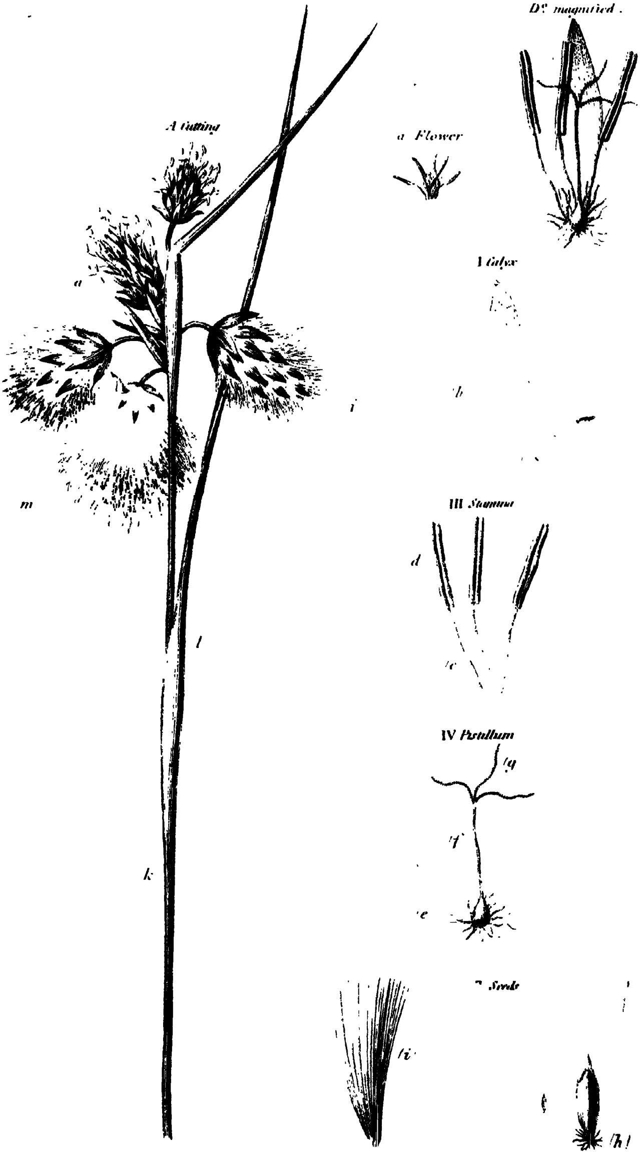
Ex. NĀRDUS STRICTA.

MAT-GRASS.



ERIOPHORUM POLYSTACHIO

BROAD-LEAVED COTTON-GRASS.



Class III. *Triandria.* Order I. *Monogynia.*

GENUS 30.

ERIOPHORUM. *Cotton-Grass.*

(From ERION, G. *wool,* and FERO, G. to *bear.*—The English name from the down attached to the seeds resembling *cotton.*)

THE NATURAL CHARACTERS.

I. CALYX. *Spike* imbricated on all sides; (*a*) the *scales* ovate-oblong, flat-inflexed, membranaceous, loose, acuminate, (*b*) separating the flowers.

II. COROLLA, none.

III. STAMINA. *Filaments* three, capillary. (*c*) *Anthers* erect, oblong. (*d*)

IV. PISTILLUM. *Germen* very small. (*e*) *Style* filiform, length of (in our specimen shorter than) the scales of the calyx. (*f*) *Stigmata* three, slender, reflexed. (*g*)

V. PERICARP none.

VI. SEEDS triquetous, acuminate, furnished with *villi,* (*h*) becoming longer than the spike. (*i*) (*i*)

THE SECONDARY CHARACTERS.

I. STEM, a *culm,* cylindrical. (*k*)

II. LEAVES, grass-like, vaginant, simple, intire. (*l*)

III. FLOWERS, terminal and woolly. (*m*)

IV. HABITATION, in moist meadows and moors.

Class II. *Triandria.* Order I. *Monogynia.*

GENUS 31.

SCHŒNUS. *Bog-Rush.*

(From SCHOINOS, G. a *rush.*—The English name from its habitation in *bogs,* and its resemblance to the *rush.*)

THE NATURAL CHARACTERS.

I. **Calyx,** a common *Glume,* many-flowered, bivalved, large, erect, attenuate, persisting. (*a*) (*a*)

II. **Corolla.** *Petals* six, lanceolate, acute, converging, persisting, unequal in situation, almost imbricate, the outer ones shorter. (*b*)

III. **Filaments** three, capillary. (*c*) *Anthers* erect, oblong, arrow-shaped. (*d*)

IV. **Germen,** ovato-triquetrous, obtuse. (*e*) *Style* setaceous, length of the corolla. (*f*) *Stigma* trifid, slender. (*g*)

V. **Pericarp** none. The *Corolla* loosely converging, ejecting the mature seed.

VI. **Seed** one, subovate, above thicker, obscurely three-cornered, shining. (*h*)

THE SECONDARY CHARACTERS.

I. **Stem,** a *culm,* cylindrical or triquetous, leafy or naked. (*i*)

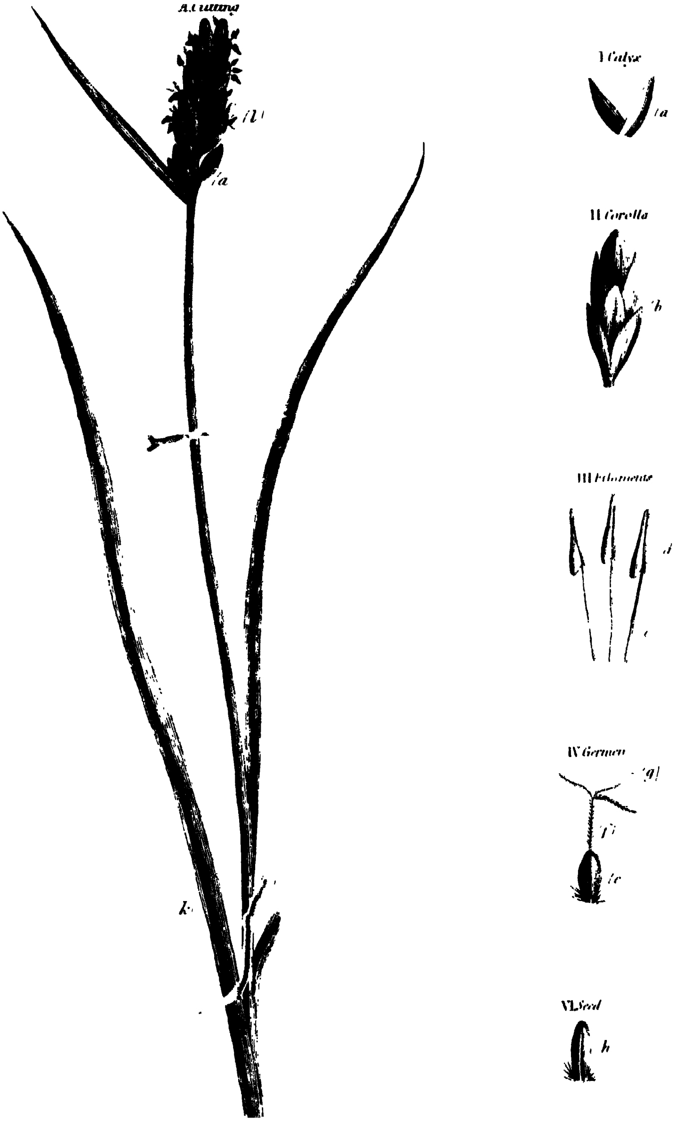
II. **Leaves,** grassy, vaginant, subulate, simple, intire. (*k*)

III. **Flowers,** terminal, in a spiked head. (*l*)

IV. **Habitation,** on turfy bogs.

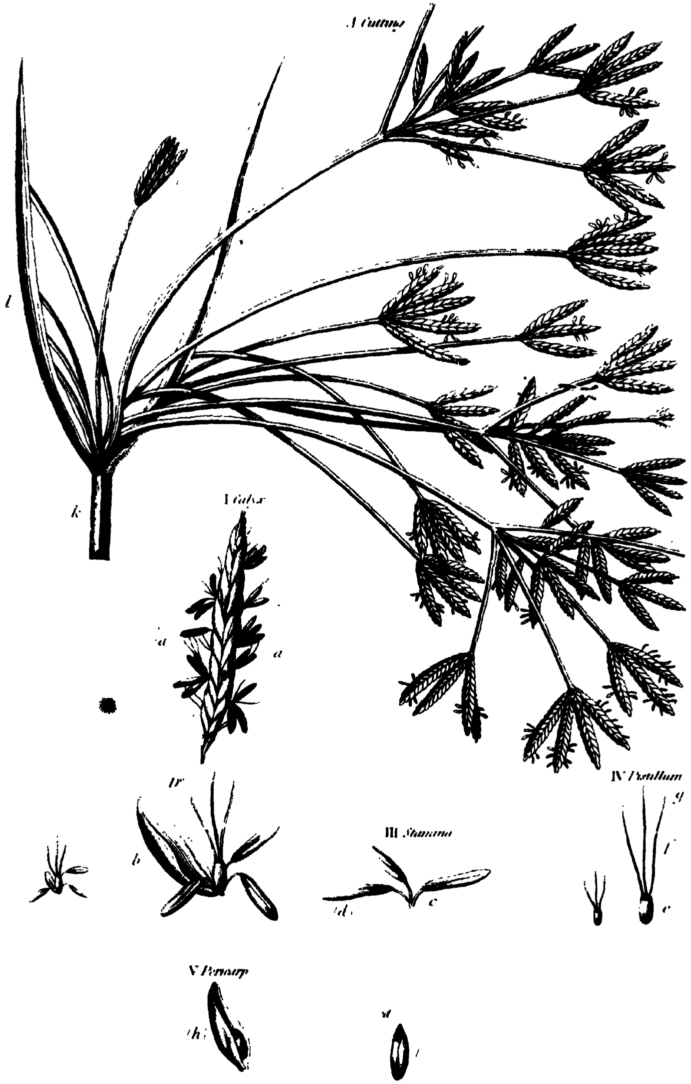
EX. SCHŒNUS COMPRESSUS

COMPRESSED BOG-RUSH.



Ex. CYPERUS LONGUS.

SWEET CYPERUS.



Class III. *Triandria.* Order I. *Monogynia.*

GENUS 32.

CYPERUS. *Cyperus.*

(From KYPAROS, G. a *round vessel,* the root being supposed to resemble such.—The English appellation the same.)

THE NATURAL CHARACTERS.

I. CALYX. *Spike* imbricated in two rows; (*a*) (*a*) with *scales* ovate-keeled, plano-inflexed, separating the flowers. (*b*)

II. COROLLA none.

III. STAMINA. *Filaments* three, very short. (*c*) *Anthers* oblong, furrowed. (*d*)

IV. PISTILLUM. *Germen* very small. (*e*) *Style* filiform, very long. (*f*) *Stigmata* three capillary. (*g*)

V. PERICARP none. *Calyx* incloses the seed. (*h*)

VI SEED one, triquetrous, acuminate, (*i*) destitute of *villi.*

THE SECONDARY CHARACTERS.

I. STEM, triquetrous, striate. (*k*)

II. LEAVES grassy, vaginant, intire. (*l*)

III. FLOWERS in spikes, the *spikelets* assembled, forming a kind of *umbel.* (*m*)

IV. HABITATION, in marshes, a rare plant.

Class III. *Triandria.* Order I. *Monogynia.*

GENUS 33.

SCIRPUS. *Club-rush.*

(From SIRPO, L. to *bind*, mats and chair-bottoms being made from the culms of some of the species.—The English name from its resembling a *rush*, and the terminal oblong spike give it the likeness to a club.)

THE NATURAL CHARACTERS.

I. **Calyx.** *Spike* on every side imbricated: (*a*) with *scales* ovate, plano-inflexed, (*b*) separating the flowers.

II. **Corolla** none.

III, **Stamina.** *Filaments* three, getting longer.(*c*) *Anthers* oblong.(*d*)

IV. **Pistillum.** *Germen* very small. (*e*) *Style* filiform, long. (*f*) *Stigmata* three, capillary. (*g*)

V. **Pericarp** none.

VI. **Seed** one, triquetrous, acuminate, furnished with *villi* shorter than the *Calyx*; (*h*) in some cases these *villi* are attached to the apex of the seed, in others to the base.

THE SECONDARY CHARACTERS.

I. **Stem,** a *culm,* solid, round, (*i*) or triquetrous, naked, or leafy.

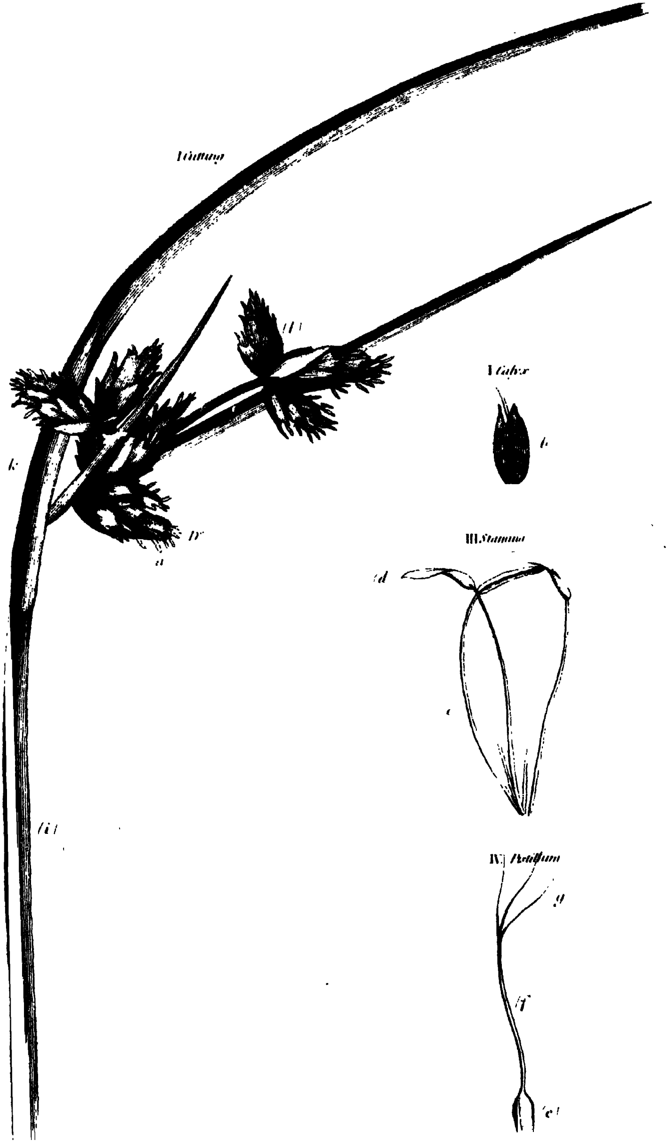
II. **Leaves,** grassy, vaginant, (*k*) alternate or radical.

III. **Flowers,** terminal or lateral, in roundish spikes. (*l*)

V. **Habitation,** in ponds, marshes, bogs, and by the sea-side.

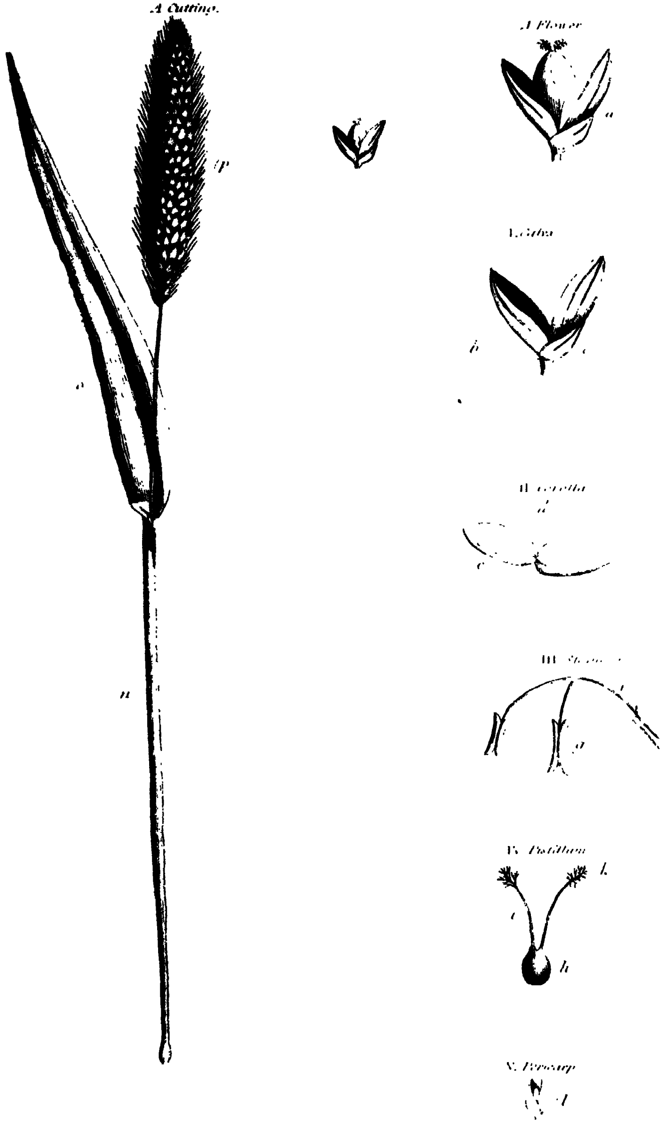
EX. SCIRPUS MARITIMUS.

SALT-MARSH CLUB-RUSH.



LX. PĀNICUM VIRIDE

GREEN PANICK-GRASS.



Class III. *Triandria.* Order I. *Monogynia.*

GENUS 34.

PANICUM. *Panick-grass.*

(From PANE, L. *bread;* one species of this genus, panicum miliaceum (millet), being used for that purpose.—No peculiar English generic name.)

THE NATURAL CHARACTERS.

I. CALYX. *Glume* one-flowered, (*a*) three-valved; (*b*) *valves* subovate; the third least, placed at the back of the other. (*c*)

II. COROLLA bivalved; (*d*) *valves* subovate, one smaller, flatter. (*e*)

III. STAMINA. *Filaments* three, capillary, short. (*f*) *Anthers* oblong (two-forked.) (*g*)

IV. PISTILLUM. *Germen* roundish. (*h*) *Styles* two, capillary. (*i*) *Stigmata* feathery. (*k*)

V. PERICARP none. The *Corolla* adheres to the seed, nor does it open. (*l*)

VI. SEED, one, covered, roundish, flattish on one side. (*m*)

THE SECONDARY CHARACTERS.

I. STEM, a *culm,* articulate. (*n*)

II. LEAVES, gramineous, subulate, vaginant, entire. (*o*)

III. FLOWERS, terminal, spiked (*p*) or paniculate.

IV. HABITATION, moist meadows, corn-fields, sandy grounds, the sea-shore.

Class III. *Triandria.* Order II. *Digynia.*

GENUS 35.

ALOPECURUS. *Fox-tail-grass.*

(From ALOPEX, G. a *fox,* and OURA, G. a *tail;* this grass resembling the *tail of a fox.*—The English appellation a translation of the Greek.)

THE NATURAL CHARACTERS.

I. CALYX. *Glume,* one-flowered, two valved: (*a*) *valves* ovato-lanceolate, concave, compressed, equal. (*b*)

II. COROLLA one-valved: *valve* concave, length of the calyx. A long *arista* inserted towards the base at the back of the valve. (*c*)

III. STAMINA. *Filaments* three, capillary. (*d*) *Anthers* both ends bifurcate. (*e*)

IV. PISTILLUM. *Germen* roundish. (*f*) *Styles* two, cirrhous, reflexed, longer than the calyx. (*g*) *Stigmata* simple. (*h*)

V. PERICARP none. The *Corolla* cloathing the seed. (*i*)

VI. SEED one, roundish, covered. (*k*)

THE SECONDARY CHARACTERS.

I. STEM, a *culm,* articulate. (*l*)

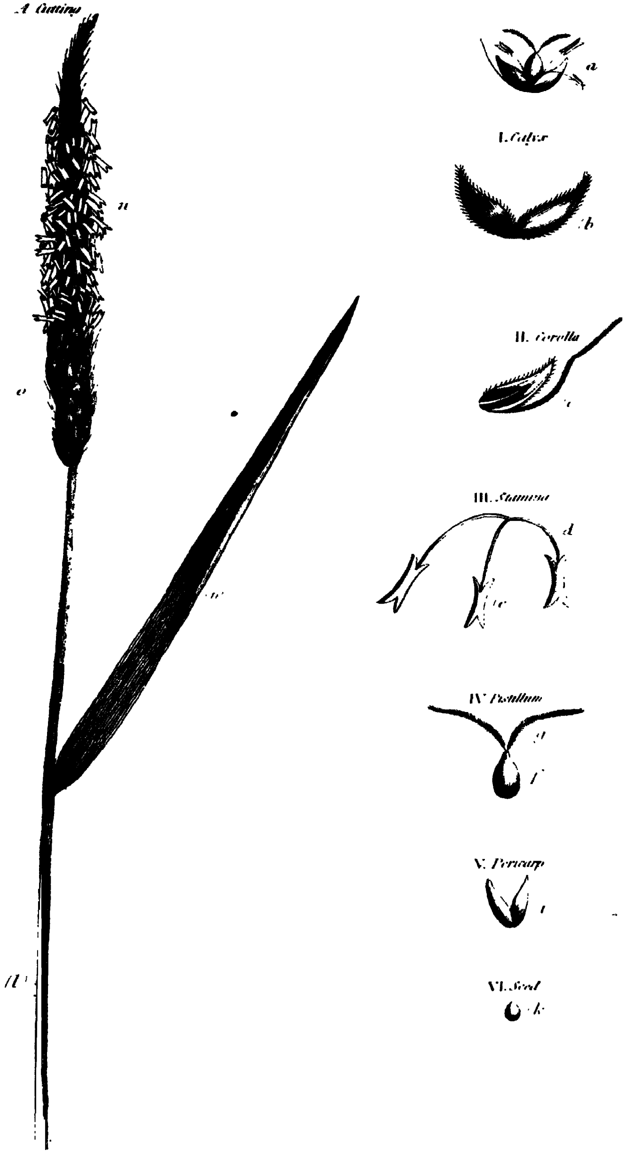
II. LEAVES, gramineous, subulate, vaginant, entire. (*m*)

III. FLOWERS, terminal, spiked (*n*) or paniculate, defended by long *villi.* (*o*)

IV. HABITATION, meadows, road-sides, also in stagnant water, on walls, and sterile ground.

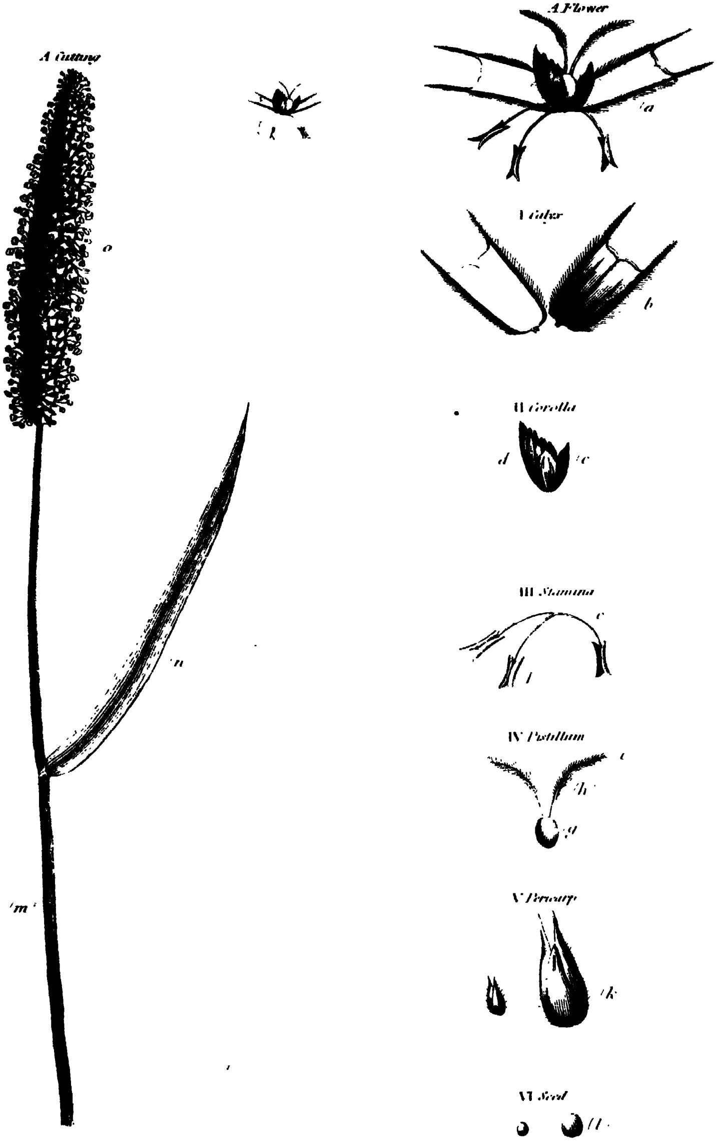
Ex. ALOPECŪRUS AGRESTIS.

SLENDER FOXTAIL-GRASS.



XV. PHLEUM PRATENSE.

COMMON CAT'S-TAIL-GRASS.



GENUS 36.

PHLEUM. *Cat's-tail-grass.*

(From PHLEO, G. to *abound,* from its abounding with seeds;—and the English name from the resemblance of the spikes to the *tail of a cat.*)

THE NATURAL CHARACTERS.

I. CALYX. *Glume* one-flowered, (*a*) two-valved, oblong, linear, compressed, opening with a bicuspid apex: (*b*) *valves* straight, concave, compressed, embracing, equal, truncate, mucronate at the summit of the keel.

II. COROLLA two valved, (*c*) shorter than the calyx: outer *valve*(*d*) embracing the lesser inner valve.

III. STAMINA. *Filaments* three, capillary, longer than the calyx. (*e*) *Anthers* oblong, bifurcate. (*f*)

IV. PISTILLUM. *Germen* roundish. (*g*) *Styles* two, capillary, reflexed. (*h*) *Stigmata* feathery. (*i*)

V. PERICARP none. *Calyx* and *Corolla* enclosing the seed. (*k*)

VI. SEED one, roundish. (*l*)

THE SECONDARY CHARACTERS.

I. STEM, a *culm,* articulate. (*m*)

II. LEAVES, gramineous, subulate, vaginant, entire. (*n*)

III. FLOWERS, terminal, closely spiked, spikelets mostly cylindrical. (*o*)

IV. HABITATION, mountains, heaths, corn-fields, walls, and on the coast.

Class III. *Triandria.* Order II. *Digynia.*

GENUS 37.

PHALARIS. *Canary-grass.*

(From PHALOS, G. *white*, from the whiteness of its seeds.—The English name from its original place of growth, the Canary Islands, this genus, although now common, not being originally a native.)

THE NATURAL CHARACTERS.

I. **Calyx.** *Glume* one-valved, two-valved, compressed, obtuse: (*a*) *valves* navicular, compressed, carinate, above more obtuse, the margins straight, parallel converging. (*b*)

II. **Corolla,** two-valved, less than the calyx: (*c*) the outer *valve* oblong, acuminate, (*d*) convolute; the inner less.

III. **Stamina.** *Filaments* three, capillary, shorter than the calyx. (*e*) *Anthers* oblong (bifurcate.) (*f*)

IV. **Pistillum.** *Germen* roundish. (*g*) *Styles* two, capillary. (*h*) *Stigmata* villous. (*i*)

V. **Pericarp** none. The *Corolla* adheres to the seed like an incrustation, nor opens. (*h*)

VI. **Seed** one, covered, rough, from a round becomes at both ends acuminate. (*i*)

THE SECONDARY CHARACTERS.

I. **Stem,** a *culm,* leafy, articulate. (*k*)

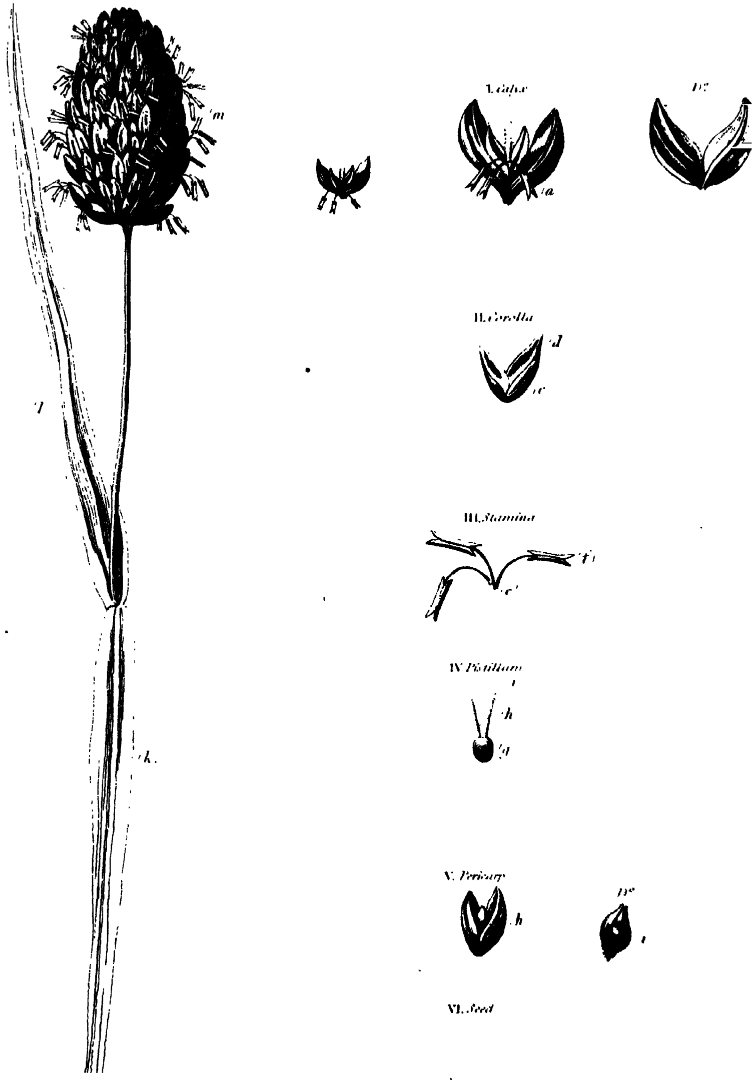
II. **Leaves,** gramineous, subulate, entire. (*l*)

III. **Flowers,** terminal, loosely spiked, (*m*) sometimes paniculate.

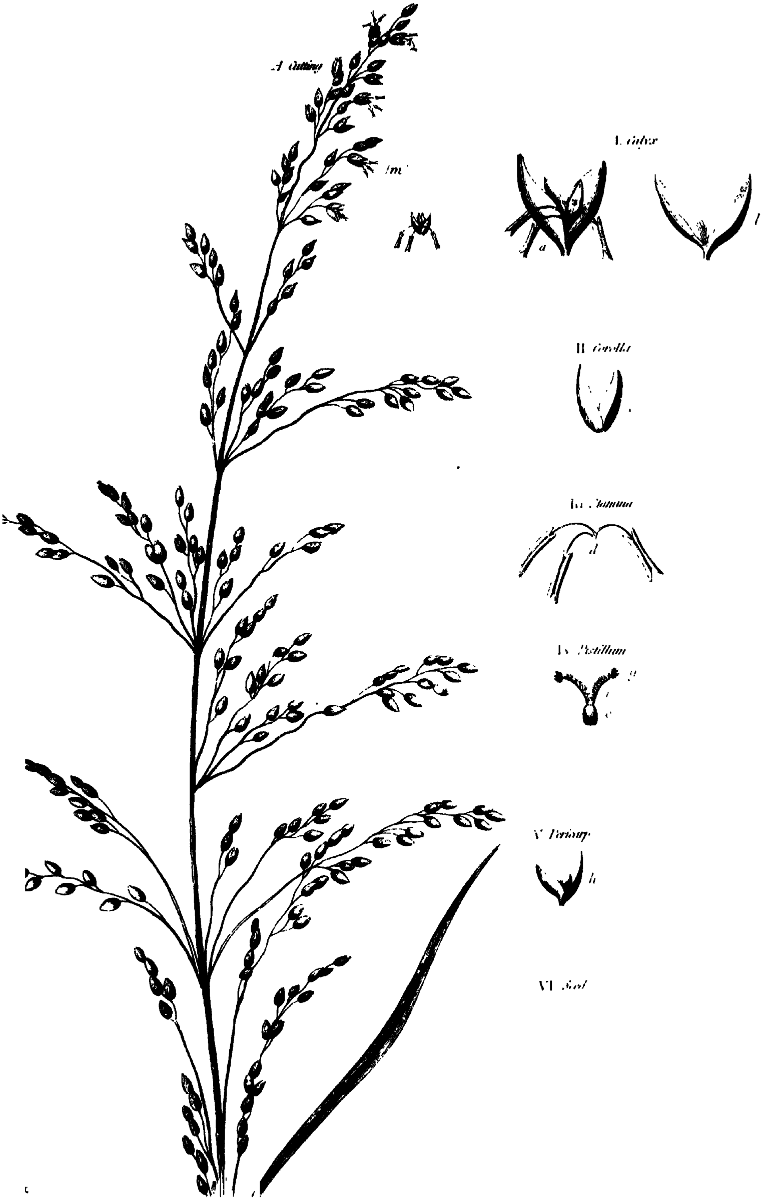
IV. **Habitation,** road-sides, heaths, sandy shores.

XX. PHĀLARIS CANARĪENSIS.

MANURED CANARY-GRASS.



MILLET-GRASS.



Class III. *Triandria.* Order II. *Digynia.*

GENUS 38.

MILIUM. *Millet-grass.*

(From MILLE, L. a *thousand,* on account of the multitude of its seeds.—No different English generic name.)

THE NATURAL CHARACTERS.

I. **Calyx.** *Glume,* one-flowered, two-valved: (*a*) *valves* ovate, acuminate. (*b*)

II. **Corolla,** two-valved, less than the calyx: *valves* ovate, one of these the least. (*c*)

III. **Stamina.** *Filaments* three, capillary, very short. (*d*) *Anthers* bifurcate.

IV. **Pistillum.** *Germen* roundish. (*e*) *Styles* two, capillary. (*f*) *Stigmata* pencilform. (*g*)

V. **Pericarp.** *Seed* covered by the corolla, (*h*) very smooth.

VI. **Seed** one, covered, roundish. (*i*)

THE SECONDARY CHARACTERS.

I. **Stem,** a *culm,* (*k*) articulate.

II. **Leaves,** gramineous, subulate, vaginant, entire. (*l*)

III. **Flowers,** terminal, paniculate. (*m*)

IV. **Habitation,** in moist shady grounds, corn-fields, open ground, especially where water has been stagnant.

Class III. *Triandria.* Order II. *Digynia.*

GENUS 39.

DACTYLIS. *Cock's-foot-grass.*

(From DAKTULOS, G. *the finger,* the spikes, usually four, having such appearance.—The English name from the spikes resembling *the foot of the cock.*)

THE NATURAL CHARACTERS.

I. Calyx. *Glumes* two, (*a*) compressed, keeled, acute: (*b*) one valve shorter than the floret; (*c*) the other longer.*

II. Corolla. *Glumes,* compressed, oblong, acute: one valve within the larger valve of the calyx, keeled. (*c*)

III. Stamina. *Filaments* three, capillary, length of the corolla. *Anthers* two-forked. (*d*)

IV. Pistillum. *Germen* top-shaped. (*e*) *Styles* two, capillary, spreading, villous. (*f*) *Stigma* simple. (*g*)

V. Pericarp none, the *Corolla* enclosing the seed, afterwards ejecting the same. (*h*)

VI. Seed one, on this side depressed, on the other convex, naked. (*i*)

THE SECONDARY CHARACTERS.

I. Stem, a *culm,* articulate. (*k*)

II. Leaves, grassy, subulate, vaginant, simple, entire. (*l*)

III. Flowers, thick-panicled, terminal. (*m*)

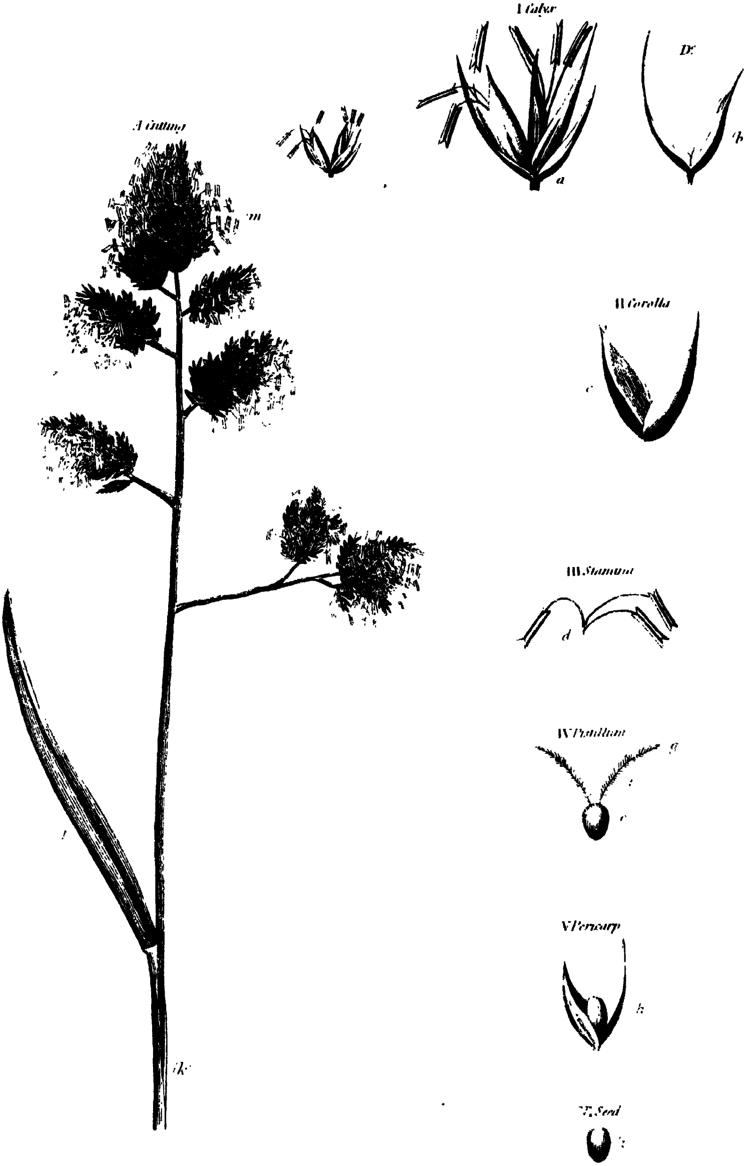
IV. Habitation, sea-coast, meadows, and shady places.

---

* In some species the calyx is one-flowered, two-flowered, and in others many-flowered.

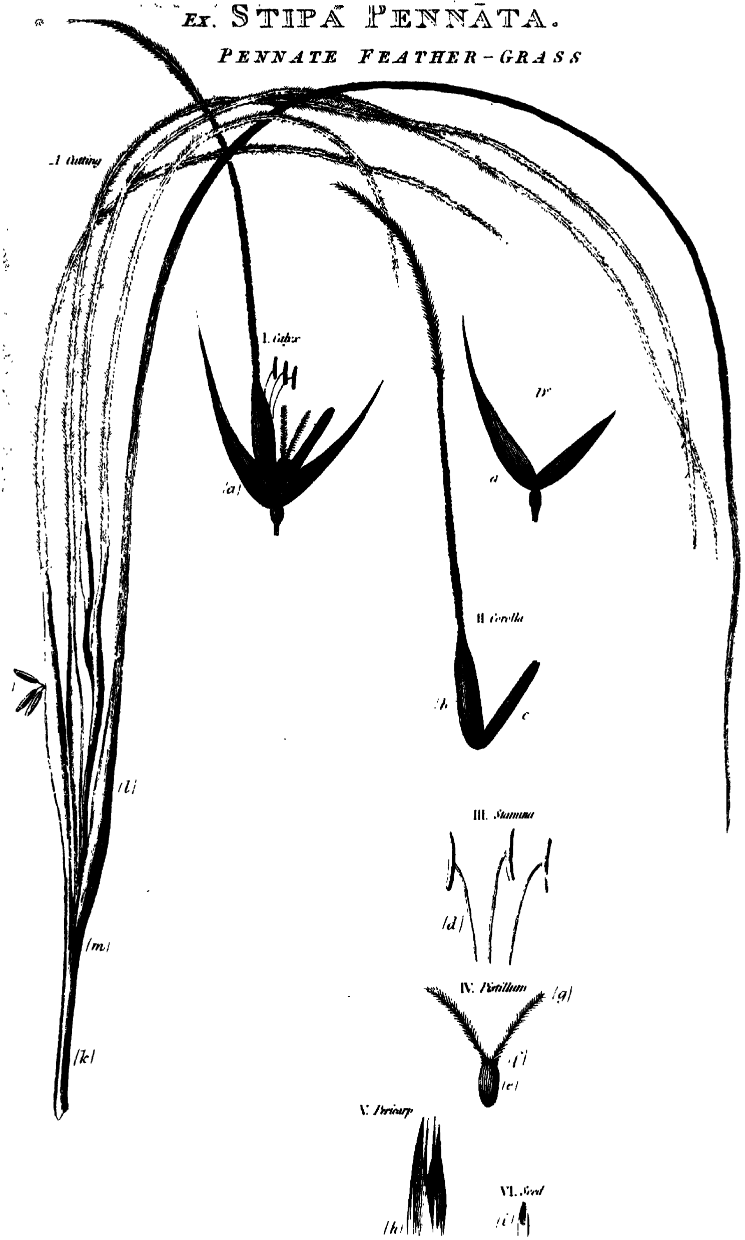
LX. DACTYLIS GLOMERATA.

ROUGH COCKS-FOOT GRASS.



Ex. STIPA PENNATA.

PENNATE FEATHER-GRASS



Class III. *Triandria.* Order II. *Digynia.*

GENUS 40.

STIPA. *Feather-grass.*

(From STIPO, L. to *bind*, the *roots forming turf.*—The English name from the long *feathery* awn belonging to this tribe.)

THE NATURAL CHARACTERS.

I. CALYX. *Glume* one-flowered, two-valved, loose, acuminate. (*a*) (*a*)

II. COROLLA, two-valved. The exterior *valve* terminated at the apex by a long *arista*, twisted, jointed at the base, straight; (*b*) the interior *valve*, the length of the exterior, awnless, linear. (*c*)

III. STAMINA. *Filaments* three, capillary. *Anthers* linear. (*d*)

IV. PISTILLUM. *Germen* oblong. (*e*) *Styles* two, hirsute, united at the base. (*f*) *Stigmata* pubescent. (*g*)

V. PERICARP. Glume adhering to the seed. (*h*)

VI. SEED, oblong, covered. (*i*)

THE SECONDARY CHARACTERS.

I. STEM, a *culm*, but without knots. (*k*)

II. LEAVES, numerous, capillary, (*l*) vaginant, entire. (*m*)

III. FLOWERS, few, paniculate, terminal. (*n*)

IV. HABITATION, on lime-stone rocks.

Class III. *Triandria.* Order II. *Digynia.*

GENUS 41.

LAGURUS. *Hare's-tail-grass.*

(From LAGOS, G. a *hare,* and OURA, G. a *tail,* from the spike resembling the tail of this animal.—No other English name.)

THE NATURAL CHARACTERS.

I. **Calyx.** *Glume,* one-flowered, (*a*) two-valved. *Valves* long, linear, patulous, very slender, both ending in pennated villi. (*b*)

II. **Corolla.** *Glume* two-valved, thicker than the calyx. The exterior *valve* longest, terminated by two *aristæ,* small, straight; (*c*) a third *arista* from the middle of the back of the same valve, reflexed-twisted, (*d*) the interior *valve* small, acuminate. (*e*)

III. **Stamina.** *Filaments* three, capillary. (*f*) *Anthers* bifurcate. (*g*)

IV. **Pistillum.** *Germen* top-shape. (*h*) *Styles* two, setaceous, villous. (*i*) *Stigmata* simple. (*k*)

V. **Pericarp** none. The *Corolla* adheres to the seed. (*l*)

VI. **Seed,** one, oblong, covered, awned. (*m*)

THE SECONDARY CHARACTERS.

I. **Stem,** a *culm,* articulate.

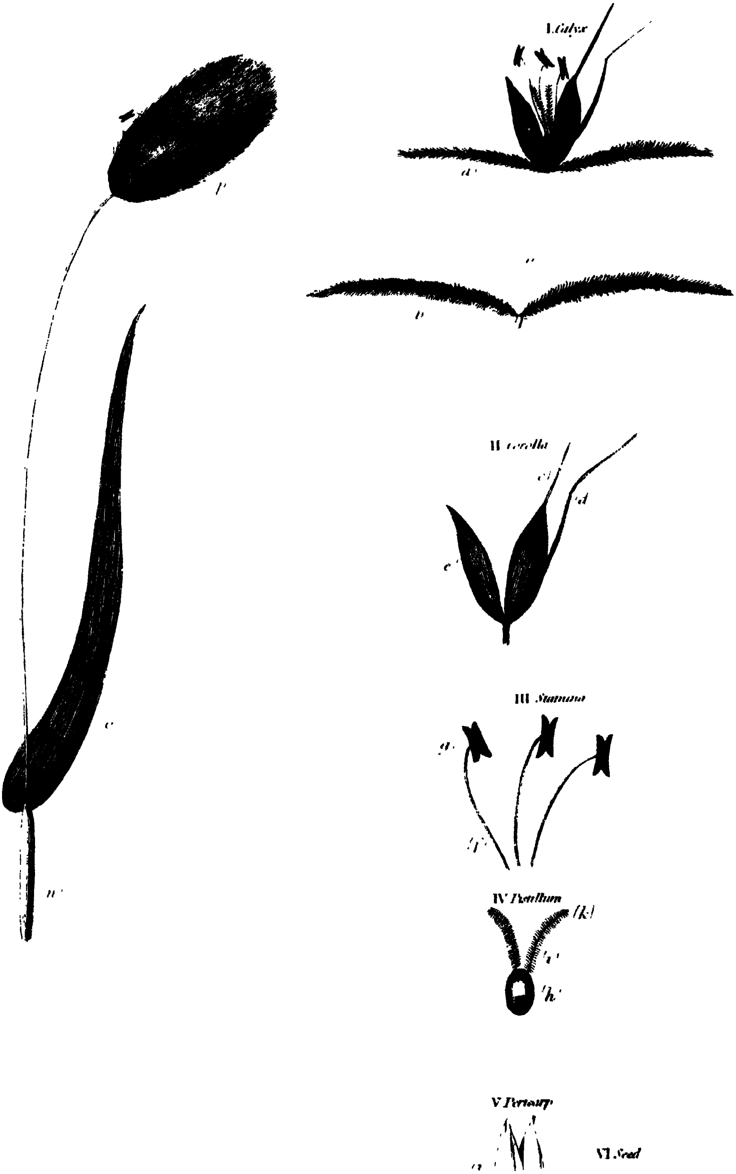
II. **Leaves,** vaginant, simple, entire, pubescent. (*o*)

III. **Flowers,** spike assembled, oval-oblong, nodding, whitish, soft to the touch. (*p*)

IV. **Habitation,** sandy plains.

Ex. LAGŪRUS OVĀTUS.

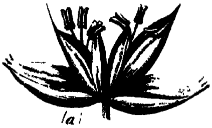
OVATE HARE'S TAIL-GRASS.



Ex. AĪRA CARIOPHYLLĒA.

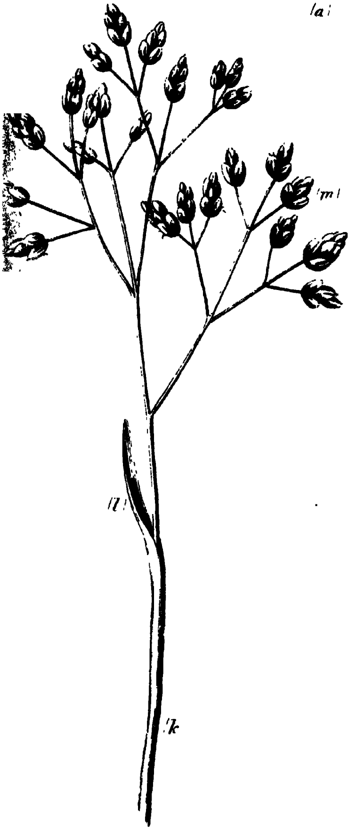
SILVER HAIR-GRASS.

Flower.



I. *Calyx.*

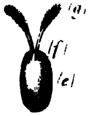
Branch.



II. *Corolla.*

III. *Stamina.*

IV. *Pistillum.*



V. *Pericarp.*

VI. *See*

Class III. *Triandria.* Order II. *Digynia.*

GENUS 42.

AIRA. *Hair-grass.*

(From AIRO, *to extirpate,* being the Darnel-grass of the Ancients, a most *pernicious weed,* the seeds of which produce delirium.—The English name from the fine *hairs* with which the leaves of some of the species are invested.)

THE NATURAL CHARACTERS.

I. CALYX. *Glume* two-flowered, (*a*) two-valved; *valves* ovato-lanceolate, acute, equal. (*b*)

II. COROLLA, two-valved: *valves* like the calyx. (*c*)

III. STAMINA. *Filaments* three, capillary, length of the flower. *Anthers,* oblong, forked at both ends. (*d*)

IV. PISTILLUM. *Germen* ovate. (*e*) *Styles* two, setaceous, patent. (*f*) *Stigmata* pubescent. (*g*)

V. PERICARP none. The *Corolla* inclosing and adhering to the seed. (*h*)

VI. SEED, subovate, covered. (*i*)

THE SECONDARY CHARACTERS.

I. STEM, a *culm,* articulate. (*k*)

II. LEAVES, gramineous, vaginant, subulate, entire. (*l*)

III. FLOWERS, paniculate (*m*) or spiked, terminal.

IV. HABITATION, sterile pastures, walls, and stagnant waters.

Class III. *Triandria.* Order II. *Digynia.*

GENUS 43.

ELYMUS. *Lyme-grass.*

(From EILEO, G. *to involve*, the Glumes representing, from their union, a kind of *involucrum* or *sheath.*—The English name from the scientific generic name.)

THE NATURAL CHARACTERS.

I. Calyx. A common *receptacle*, elongated into a spike. (*a*) (*a*) *Glume* four-leaved, (*b*) distichous; two *leaflets* placed under each *spikelet*, subulate. (*c*)

II. Corolla, two-valved: the exterior *valve* larger, acuminate, awned; (*d*) the interior *valve* flat. (*e*)

III. Stamina. *Filaments* three, capillary, very short. *Anthers* oblong, bifid at the base.(*f*)

IV. Pistillum. *Germen* top-shaped. *Styles* two, diverging, hairy, inflexed. *Stigmata* simple. (*g*)

V. Pericarp. *Corolla* enclosing the seed. (*h*) (*h*)

VI. Seed, one, linear, on one side convex, covered. (*i*)

THE SECONDARY CHARACTERS.

I. Stem, a *culm*, articulate.

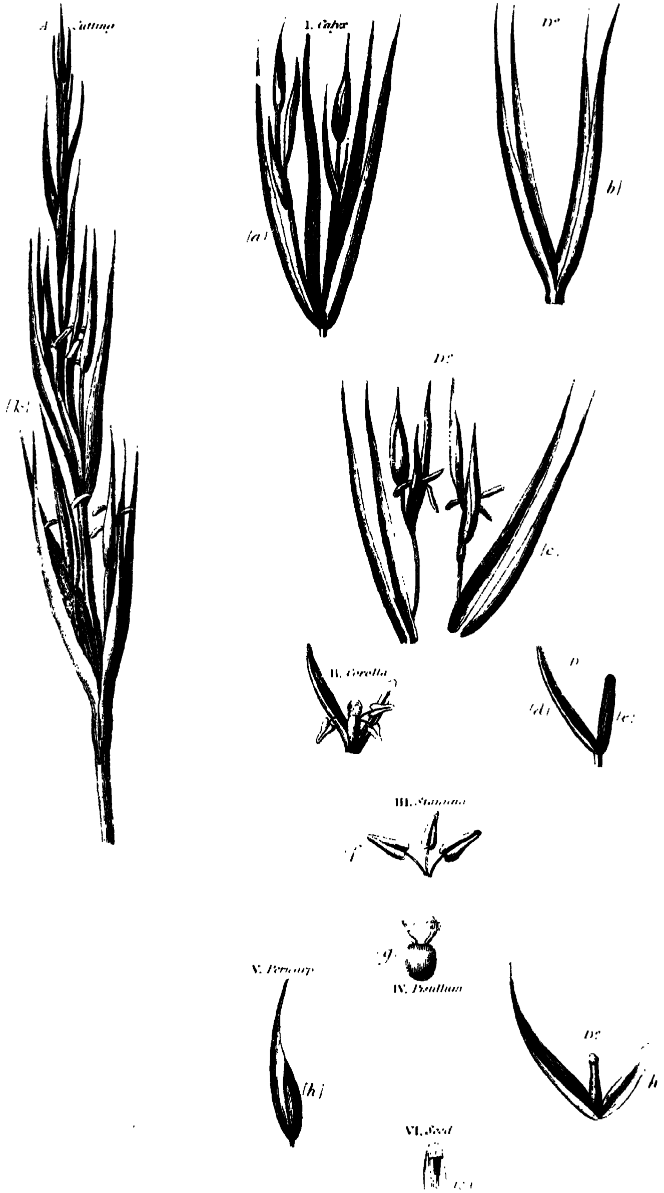
II. Leaves, gramineous, subulate, vaginant, entire.

III. Flowers, in spikes. (*k*)

IV. Habitation, the sea-coast.

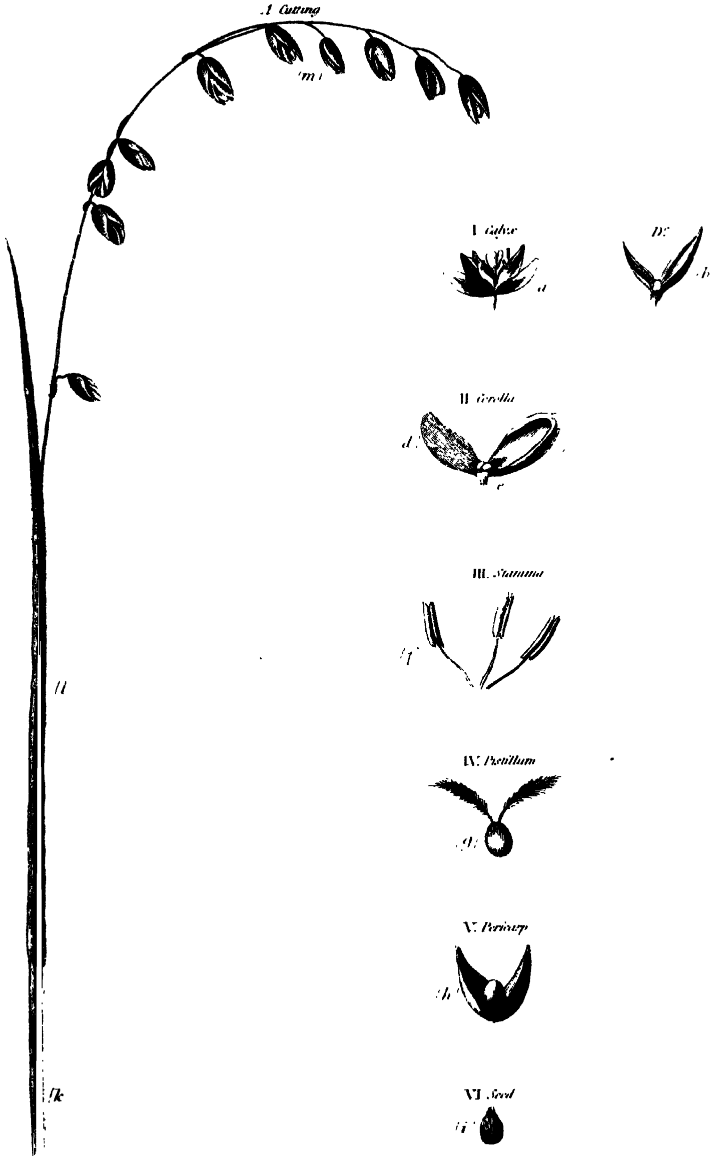
Ex. ELYMUS ARENARIUS.

UPRIGHT SEA-LYME-GRASS.



Ex. MĒLICA NŪTANS.

MOUNTAIN MELIC-GRASS.



Class III. *Triandria.* Order II. *Digynia.*

GENUS 44.

MELICA. *Melic-grass.*

(The Latin name from Theophrastus.—No different English generic name.)

THE NATURAL CHARACTERS.

I. **Calyx.** *Glume,* two-flowered, (*a*) two-valved. *Valves* ovate, concave, equal. (*b*)

II. **Corolla,** two-valved; *valves* ovate, awnless: one concave, (*c*) the other flat. (*d*) A small *body* among the florets. (*e*)

III. **Stamina.** *Filaments* three, capillary, the length of the flower. *Anthers* bifurcate. (*f*)

IV. **Pistillum.** *Germen* ovato-turbinate. *Styles* two, setaceous, patent. *Stigmata* oblong, villous. (*g*)

V. **Pericarp,** none. The *Corolla* incloses the seed, which it drops. (*h*)

VI. **Seed,** one. (*i*)

THE SECONDARY CHARACTERS.

I. **Stem,** *culm,* articulate. (*k*)

II. **Leaves,** gramineous, vaginant, subulate, entire. (*l*)

III. **Flowers,** paniculate. (*m*)

IV. **Habitation,** woods, mountains, sterile inundated parts.

Class III. *Triandria.* Order II. *Digynia.*

GENUS 45.

BRIZA. *Quaking-grass.*

(From BRIZE, *heavy,* the flour from its seeds making the bread heavy.—The English name from the looseness of its panicle, quaking with the smallest breath of air.)

THE NATURAL CHARACTERS.

I. CALYX. *Glume* many-flowered, two-valved, patent, collecting the flowers in a cordate *spike,* distichous: (*a*) *valves* cordate, concave, equal, obtuse. (*b*)

II. COROLLA, two-valved: the *inferior valve* the size and figure of the calyx. (*c*) The *superior* the least, flat, roundish, enclosing the body of the other. (*d*)

III. STAMINA. *Filaments* three, capillary. *Anthers* oblong (bifurcate?) (*e*)

IV. PISTILLUM. *Germen* roundish. *Styles* two, capillary, recurved. *Stigmata* feathery. (*f*)

V. PERICARP. *Corolla,* unchanged, contains the seed, gapes and discharges it. (*g*)

VI. SEED one, roundish, compressed, very small. (*i*)

THE SECONDARY CHARACTERS.

I. STEM, a *culm,* articulate. (*k*)

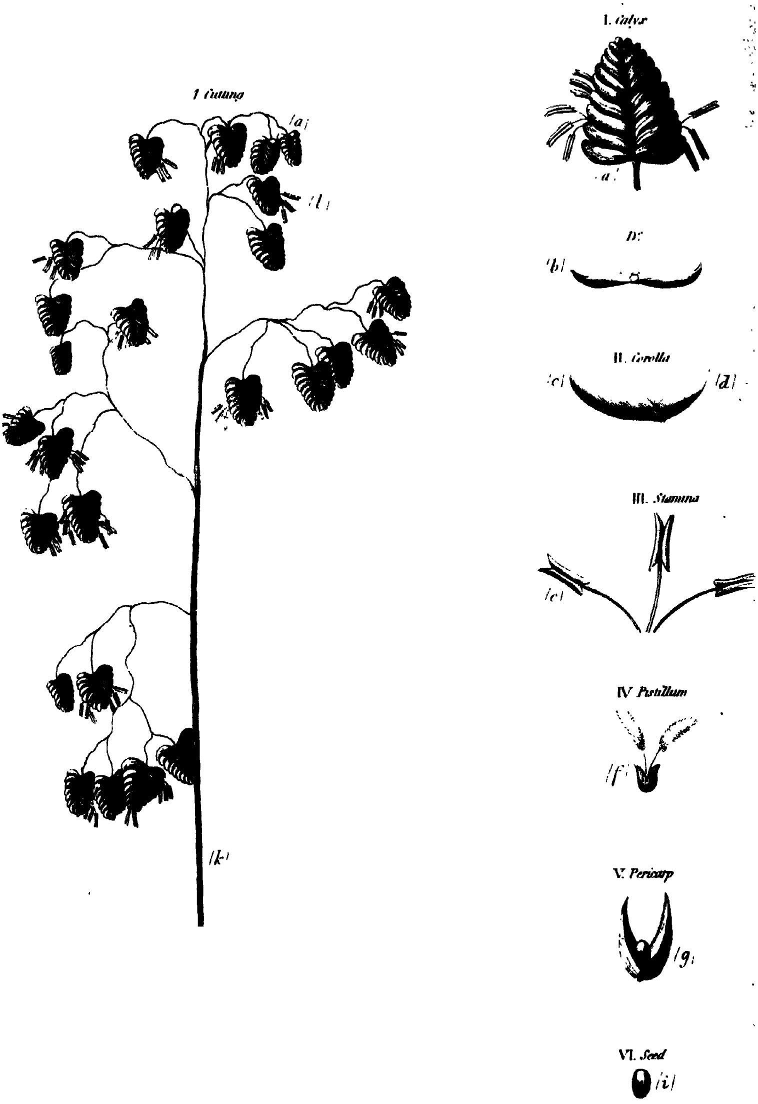
II. LEAVES, gramineous, vaginant, subulate, entire.

III. FLOWERS, terminal, in loose panicles. (*l*)

IV. HABITATION, in fields and meadows, frequent.

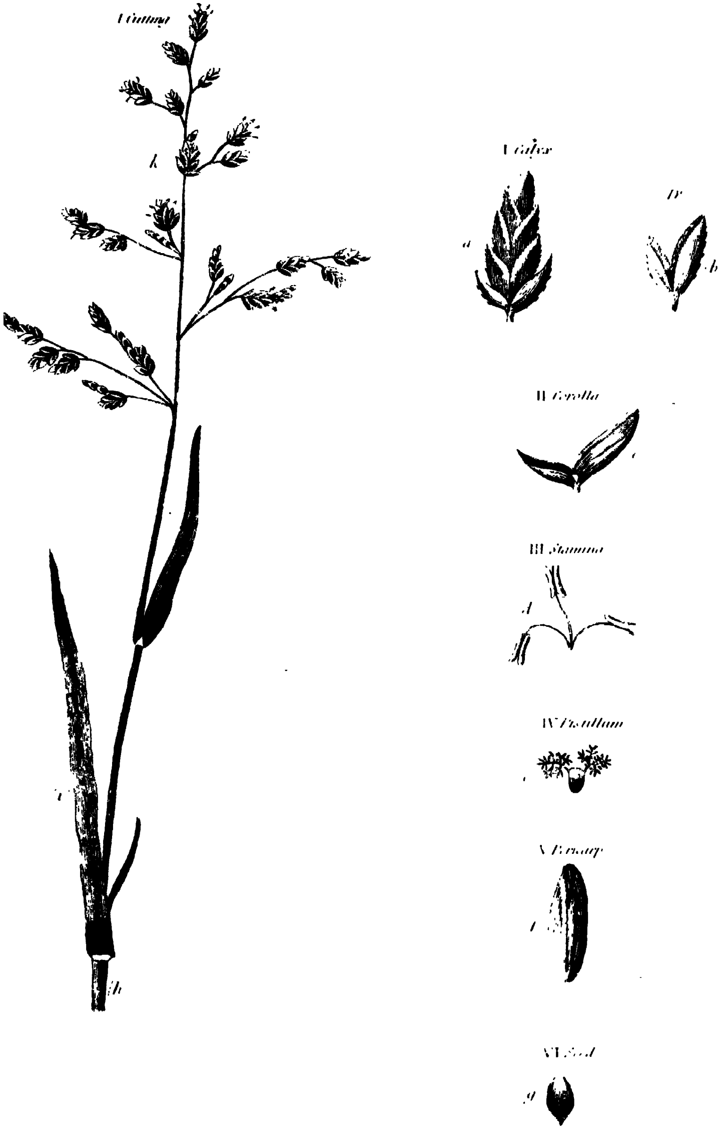
Ex. BRIZA MĒDIA.

COMMON QUAKING GRASS.



Ex. PŌA ANNUA

ANNUAL MEADOW-GRASS.



Class III. *Triandria*. Order II. *Digynia*.

GENUS 46.

POA. *Meadow-grass.*

(From ΠΟΑ, G. *an herb*, a name used by Theophrastus.—The English from this grass abounding in every *meadow*.)

THE NATURAL CHARACTERS.

I. Calyx. *Glume* many-flowered, two-valved, awnless, collecting the flowers into a distichous ovate-oblong spike. (*a*) *Valves* ovate, acuminate. (*b*)

II. Corolla, two-valved; *valves* ovate, acuminate, concave, compressed, rather longer than the calyx, somewhat scarious in the margin. (*c*)

III. Stamina. *Filaments* three, capillary. *Anthers* bifurcate. (*d*)

IV. Pistillum. *Germen* roundish. *Styles* two, reflexed, villous. *Stigmata* the same. (*e*)

V. Pericarp. The Corolla adheres to the seed, nor opens. (*f*)

VI. Seed one, oblong, acuminate at both ends, compressed, covered. (*g*)

THE SECONDARY CHARACTERS.

I. Stem, culm, articulate. (*h*)

II. Leaves, gramineous, subulate, vaginant, entire. (*i*)

III. Flowers, terminal, paniculate. (*k*)

IV. Habitation, all situations.

Class III. *Triandria.* Order II. *Digynia.*

GENUS 47.

BROMUS. *Brome-grass.*

(From BROSKO, G. *to eat,* the seeds being used as *food.*—The English name the same, with the addition of the word *grass.*)

THE NATURAL CHARACTERS.

I. CALYX. *Glume* many-flowered, two-valved, patent, collecting the floscules into a spike: (*a*) *Valves* ovato-oblong, acuminate, awnless; the inferior less. (*b*)

II. COROLLA two-valved: the inferior *valve* larger, the size and figure of the calyx, concave, obtuse, bifid; projecting a straight *arista* below the apex; (*c*) the superior *valve* lanceolate, small, awnless. (*d*)

III. STAMINA. *Filaments* three, capillary, shorter than the corolla. *Anthers* oblong? (bifurcate) (*e*)

IV. PISTILLUM. *Germen* top-shape. *Styles* two, short, reflexed, villous. *Stigmata* simple. (*f*)

V. PERICARP. *Corolla* very closely shut, adhering, nor opens. (*g*)

VI. SEED one, oblong, covered, on this side convex, on the other furrowed. (*h*)

THE SECONDARY CHARACTERS.

I. STEM, culm, articulate.

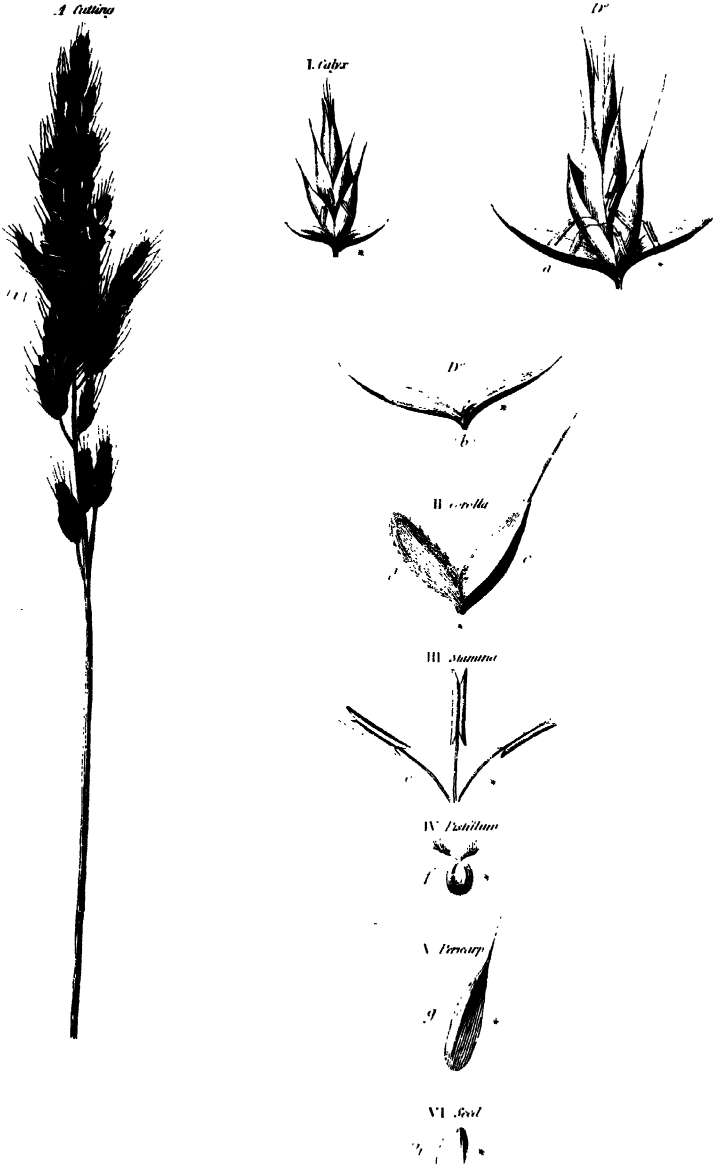
II. LEAVES, gramineous, vaginant, subulate, entire.

III. FLOWERS, spiked (*i*) or paniculate.

IV. HABITATION, corn-fields, walls, meadows, pastures, sandy and chalky soils, woods; under hedges.

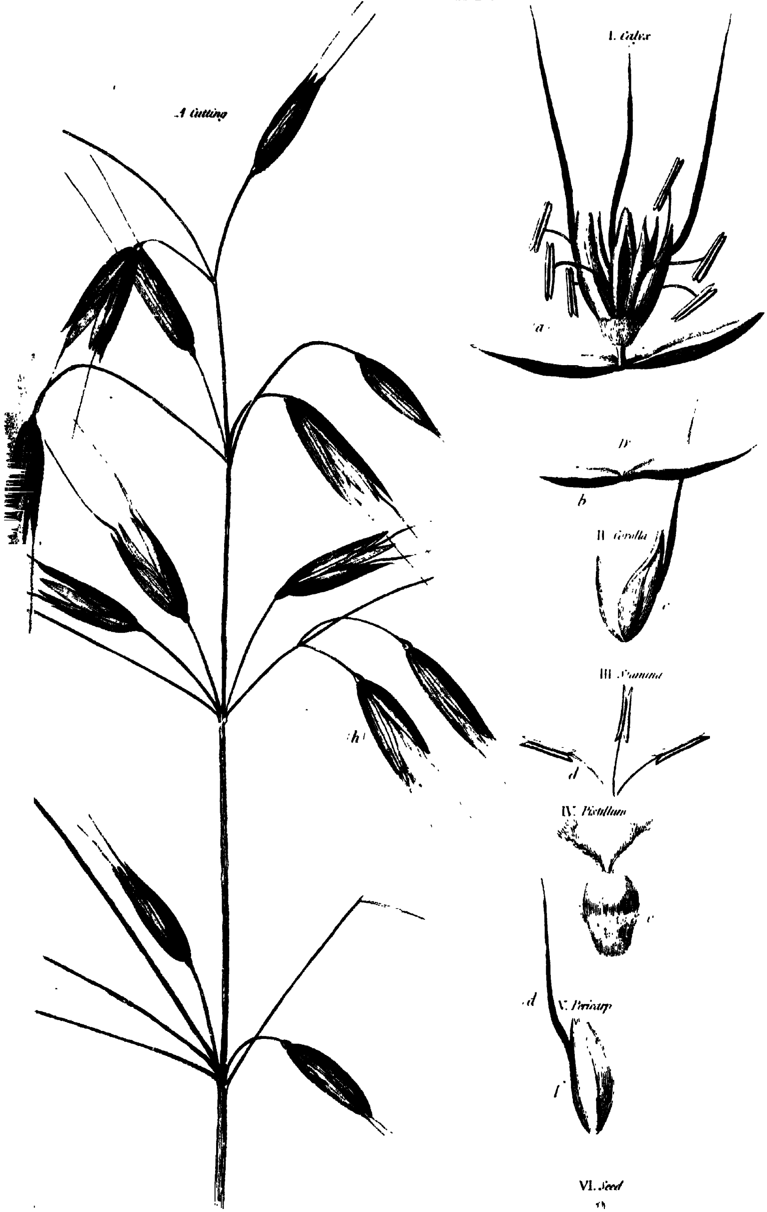
Ex. BROMUS MOLLIS.

SOFT BROME-GRASS.



AVENA FATUA.

WILD OAT.



Class III. *Triandria.* Order II. *Digynia.*

GENUS 48.

AVENA. *Oat-grass.*

(From AVEO, L. *to covet,* because cattle are especially fond of the oat.—The English name expressing *corn,* and as resembling in its growth *grass.*)

THE NATURAL CHARACTERS.

I. **Calyx.** A *Glume,* often many-flowered, two-valved, loosely collecting the flowers: (*a*) *valves* lanceolate, acute, ventricose, loose, large, awnless. (*b*)

II. **Corolla,** two-valved: the inferior *valve* harder than the calyx, size of the calyx, somewhat cylindrical, ventricose, pointed at both ends, projecting from its back an *arista,* spirally twisted, (*c*) reflexed, as if with a joint. (*d*)

III. **Stamina.** *Filaments* three, capillary. *Anthers* oblong? (bifurcate.) (*e*)

IV. **Pistillum.** *Germen* obtuse. *Styles* two, reflexed, hairy. *Stigmata* simple. (*f*)

V. **Pericarp** none. The *Corolla* closely shut adheres, nor gapes. (*g*)

VI. **Seed** one, slender-oblong, at both ends acuminate, marked longitudinally with a furrow. (*h*)

THE SECONDARY CHARACTERS.

I. **Stem,** a *culm,* articulate.

II. **Leaves,** gramineous, vaginant, subulate, entire.

III. **Flowers,** spiked, or paniculate, (*i*) terminal.

IV. **Habitation,** corn-fields, walls, meadows, pastures, chalky grounds, hedge-side.

Class III. *Triandria.* Order II. *Digynia.*

GENUS 49.

ARUNDO. *Reed.*

(From ARESCO, L. *to grow dry,* from the culm shrivelling and *drying up.*—The word *Reea* is Saxon.)

THE NATURAL CHARACTERS.

I. CALYX. *Glume* one, (*a*) or many-valved, two-valved, (*b*) erect: *valves* oblong, acuminate, awnless: one shorter. (*c*)

II. COROLLA two valved: *valves* the length of the calyx, oblong, pointed, from whose base there arises a *down* nearly the length of the flower. (*d*)

III. STAMINA. *Filaments* three, capillary. *Anthers* at both ends bifurcate. (*e*)

IV. PISTILLUM. *Germen* oblong. *Styles* two, capillary, reflexed. villous. *Stigmata* simple. (*f*)

V. PERICARP. The *Corolla* adheres to the seed, nor opens. (*g*)

VI. SEED one, oblong, pointed at both ends, furnished at the base with a long *pappus*. (*h*)

THE SECONDARY CHARACTERS.

I. STEM, *culm,* articulate, fistulous.

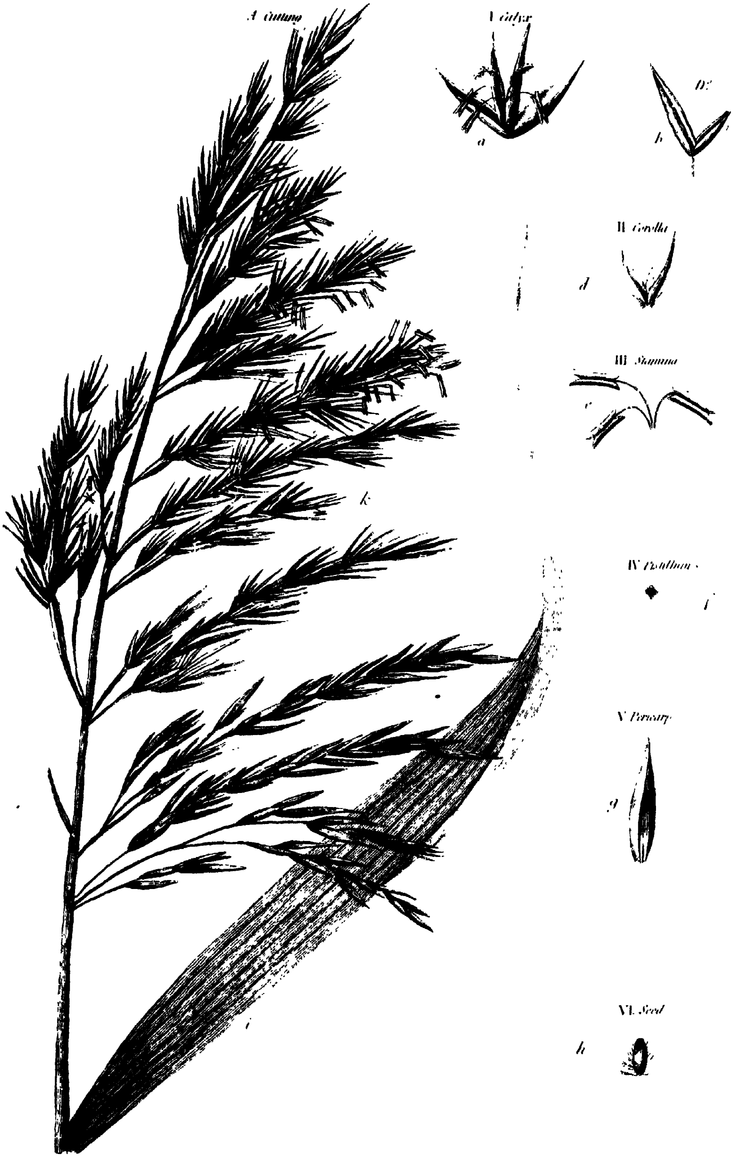
II. LEAVES, gramineous, vaginant, subulate, entire. (*i*)

III. FLOWERS, terminal, paniculate. (*k*)

IV. HABITATION, stagnant marshes, banks of rivers, moist woods, salt marshes, sea-shore.

EX. ARŪNDO PHRAGMĪTES.

COMMON REED.



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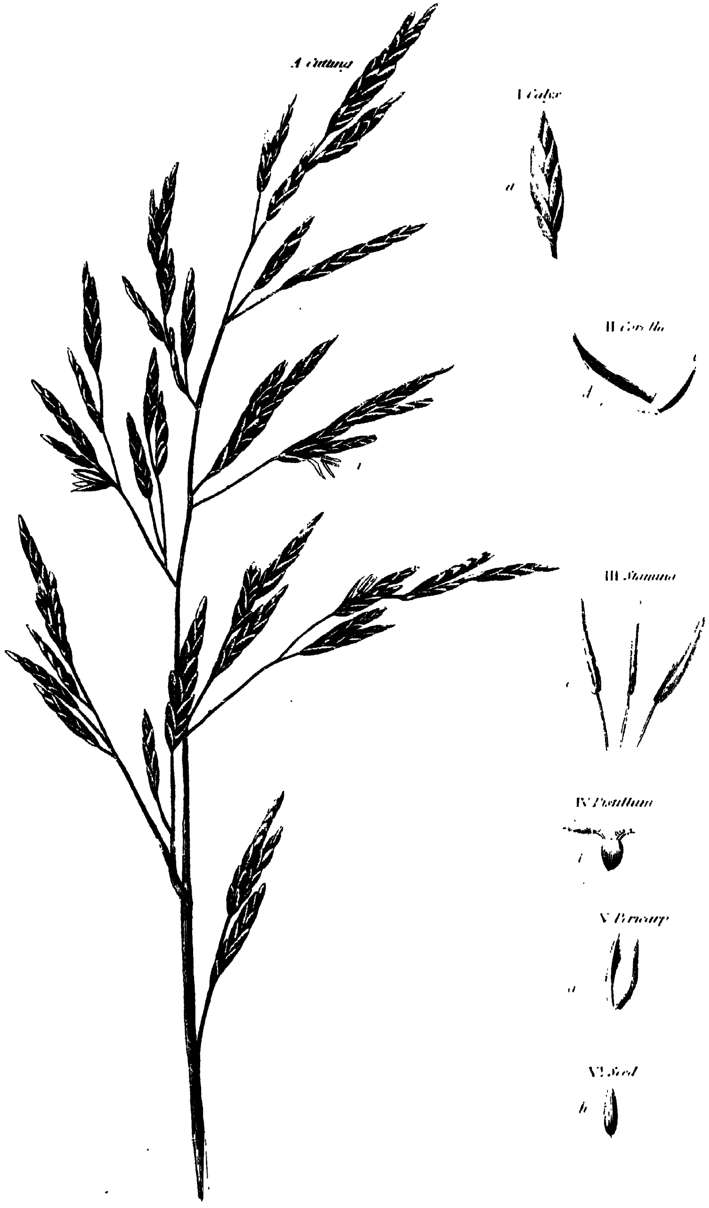
TALL FESCUE-GRASS.



Class III. *Triandria.* Order II. *Digynia.*

GENUS 50.

FESTUCA. *Fescue-grass.*

(From FESTUCA, *the shoot of a tree,* or *straw of grass.*—Fescue, in English, means a *stiff straw,* such as is used to point out the letters to children, and is a species of anagram from the Latin.)

THE NATURAL CHARACTERS.

I. **Calyx.** *Glume* many-flowered, two-valved, erect, containing the floscules in a slender spike: (*a*) *valves* subulate, acuminate; (*b*) the inferior less. (*c*)

II. **Corolla,** two-valved: *inferior valve* larger, the shape of the calyx, surpassing the calyx in size, nearly cylindrical, acuminate, terminating in a sharp-point. (*d*)

III. **Stamina.** *Filaments* three, capillary, shorter than the corolla. *Anthers* oblong. (*e*)

IV. **Pistillum.** *Germen* top-shape. *Styles* two, short, reflexed. *Stigmata* simple (feathery.) (*f*)

V. **Pericarp.** The *Corolla* closely shut, adhering, nor opens. (*g*)

VI. **Seed** one, slender-oblong, at both ends most acute, marked longitudinally with a furrow. (*h*)

THE SECONDARY CHARACTERS.

I. **Stem,** a *culm,* articulate.

II. **Leaves,** gramineous, subulate, vaginant, entire.

III. **Flowers,** terminal, paniculate. (*i*)

IV. **Habitation,** various.

Class III. *Triandria.* Order II. *Digynia.*

GENUS 51.

LOLIUM. *Darnel.*

(From LAION, G. *corn,* and OLOON, G. *injury,* the seeds of which mixed in the bread, or fermented in ale, produce head-ach, vertigo, lethargy, and even blindness for several hours.—The English name an old Saxon word.)

THE NATURAL CHARACTERS.

I. CALYX. A *common receptacle* elongated into a spike, pressing to the angle of the culm the flowers spiked in two rows. (*a*)(*a*)(*a*)

II. COROLLA, two-valved: *inferior valves* narrow-lanceolate, convolute, acuminate, length of the calyx; *superior valve* shorter, linear, more obtuse, above concave. (*b*)

III. STAMINA. *Filaments* three, capillary, shorter than the corolla. *Anthers* oblong (bifurcate.) (*c*)

IV. PISTILLUM. *Germen* top-shape. *Styles* two, capillary, reflexed. *Stigmata* plumous. (*d*)

V. PERICARP none. *Corolla* cherishes the seeds, gapes, ejects. (*e*)

VI. SEED one, oblong, on this side convex, on the other sulcato-plane, compressed. (*f*)

THE SECONDARY CHARACTERS.

I. STEM, a *culm,* articulate.

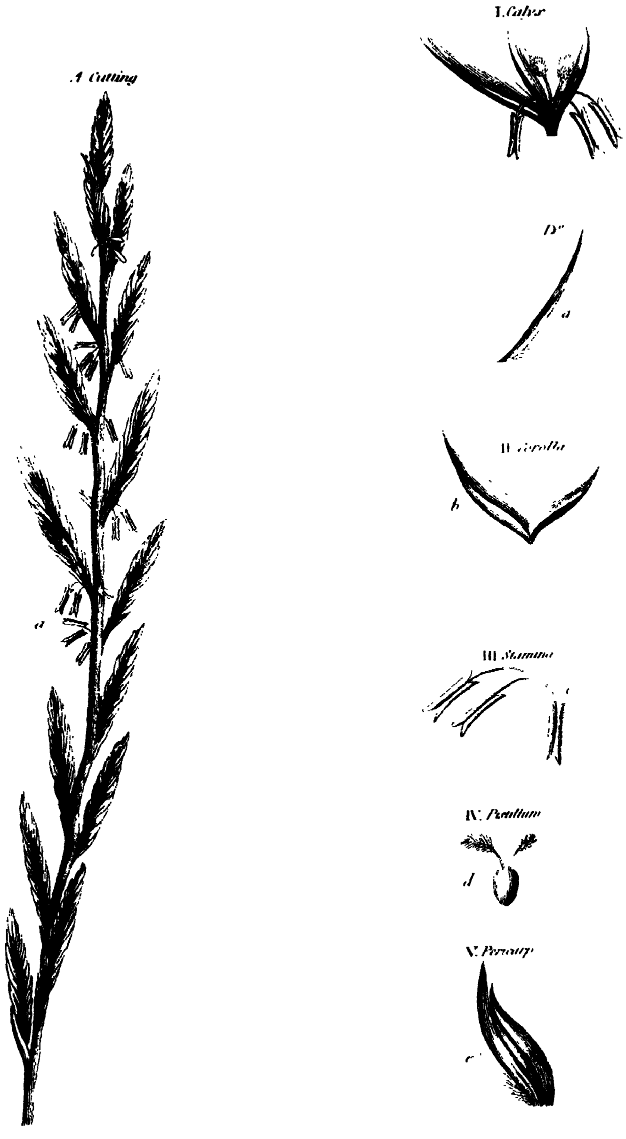
II. LEAVES, gramineous, subulate, entire.

III. FLOWERS, terminal, spiked. (*a*)

IV. HABITATION, in corn-fields, meadows.

Ex. LOLIUM PERENNE.

PERENNIAL DARNEL.



Class III. *Triandria.* Order II. *Digynia.*

GENUS 52.

ROTTBOLLIA. *Sea Hard-grass.*

(In honour of a Danish Botanist, Rottboel.—The English name from its growing near the *sea*, and the Rachis being upright and stiff.)

THE NATURAL CHARACTERS.

I. **Calyx.** *Glume* two, one-flowered, lanceolate, acute, awnless, smooth, striated, parallel.

II. **Corolla.** *Glumes* two, membranaceous, awnless, nearly equal.

III. **Stamina.** *Filaments* three, capillary. *Anthers* oblong, bifid at both ends.

IV. **Pistillum.** *Germe* oblong. *Styles* two, filiform. *Stigmata* oblong, feathery, spreading.

V. **Pericarp** none. The sinuses of the joints of the spike closed by the calyx glumes, contain the seed, till the rachis separates at the joints

VI. **Seeds** single, oblong.

THE SECONDARY CHARACTERS.

I. **Stem**, a *culm*, articulate.

II. **Leaves**, linear, acute, intire.

III. **Flowers**, terminal, in spikes.

IV. **Habitation**, sea-side.

Class III. *Triandria.* Order II. *Digynia.*

GENUS 53.

HORDEUM. *Barley.*

(AB HORRORE ARISTÆ, L. from the *horror* of its awn or beard.—The English name is derived by Junius from the Hebrew.)

THE NATURAL CHARACTERS.

I. CALYX. The *common receptacle* elongated into a spike (*a*) *Glume* six-leaved, three-flowered: *flowers* sessile: *leaflets* distant, placed in pairs, linear, acuminate. (*b*)

II. COROLLA two-valved: *inferior valve* ventricose, angular, ovato-acuminate, longer than the calyx, ending in a long *arista:* (*c*) *interior valve* lanceolate, flat, less. (*d*)

III. STAMINA. *Filaments* three, capillary, shorter than the corolla. *Anthers* oblong. (*e*)

IV. PISTILLUM. *Germen* ovate-top-shaped. *Styles* two, villous, reflexed. *Stigmata* the same. (*f*)

V. PERICARP. *Corolla* grows around the seed, nor gapes.

VI. SEED oblong, ventricose, angular, at both ends pointed, on one side marked with a longitudinal furrow. (*g*)

THE SECONDARY CHARACTERS.

I. STEM, *culm,* articulate.

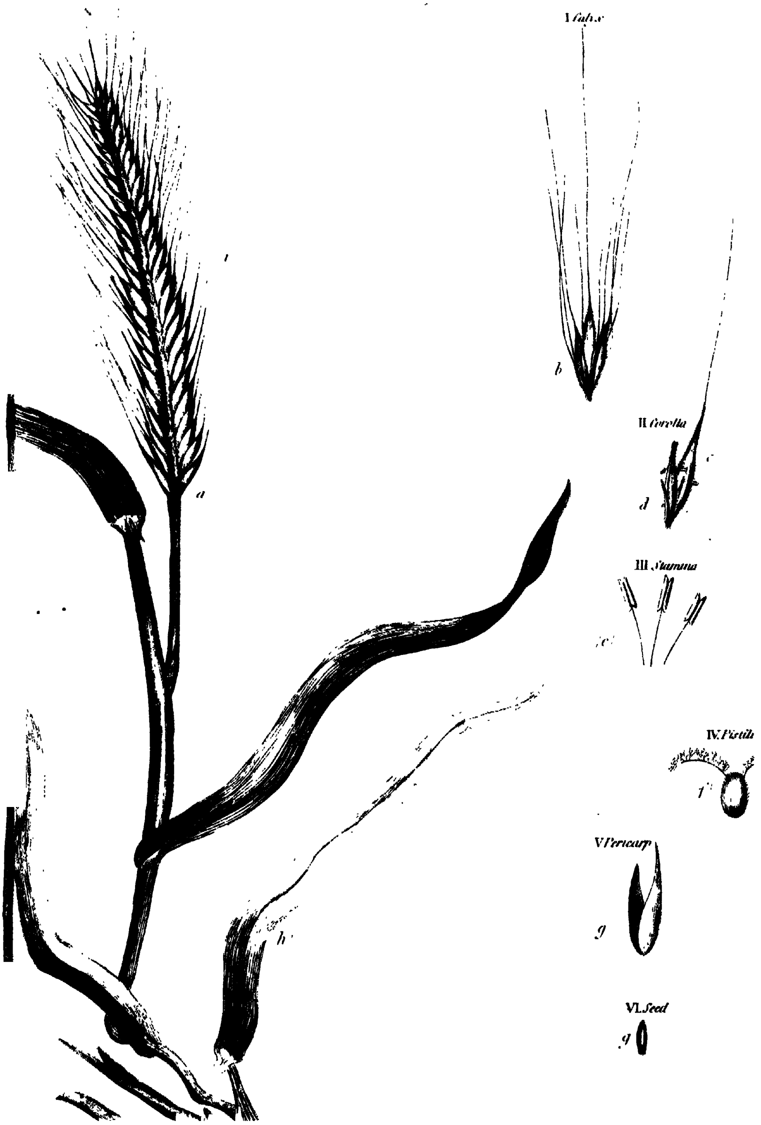
II. LEAVES, gramineous, subulate, entire. (*h*)

III. FLOWERS, terminal, spiked. (*i*)

IV. HABITATION, road-sides, meadows, pastures, the sea-side.

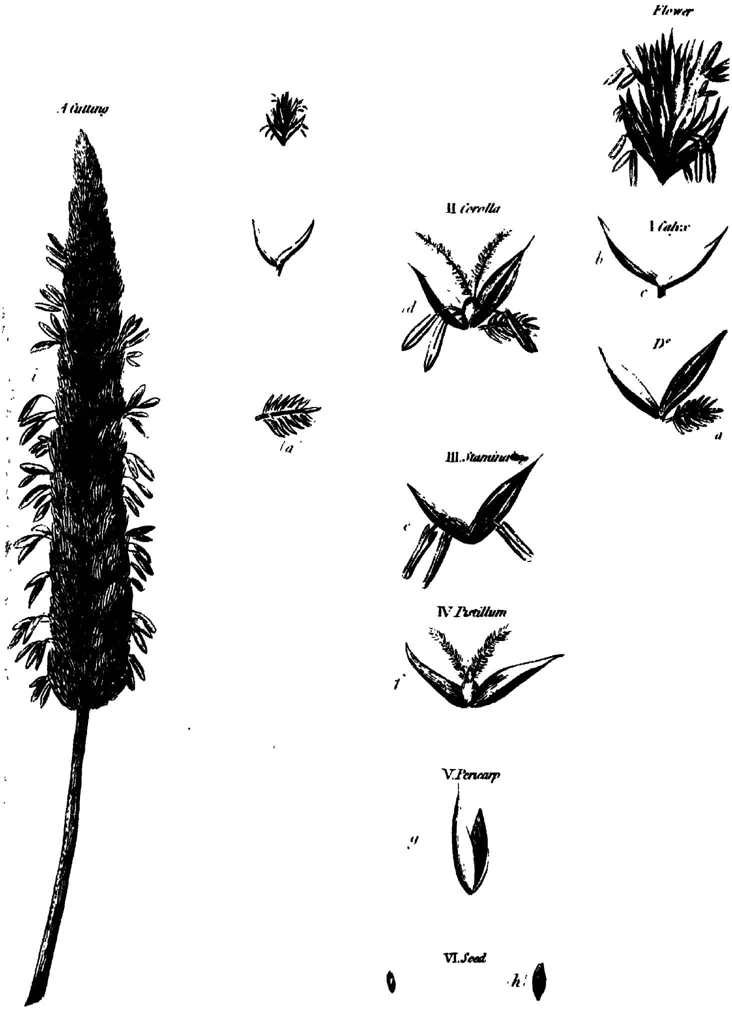
EX. HORDEUM MARITIMUM.

SEA BARLEY.



Ex. CYNOSŪRUS CRISTĀTUS.

CRESTED DOG'S-TAIL-GRASS.



Class III. *Triandria.* Order II. *Digynia.*

GENUS 54.

CYNOSURUS. *Dog's-tail-grass.*

(From KUNOS, *a dog*, and OURON, *a tail.*—The English name the same.)

THE NATURAL CHARACTERS.

I. CALYX. *Partial involucre* lateral, often three-leaved, large. (*a*) *Glume* many-flowered, (*b*) two-valved; *valves* linear, acuminate, equal. (*c*)

II. COROLLA two-valved; *outer* concave, longer; *inner* flat, awnless. (*d*)

III. STAMINA. *Filaments* three, capillary. *Anthers* oblong. (*e*)

IV. PISTILLUM. *Germen* top-shaped. *Styles* two, villous, reflexed. *Stigmata* simple. (*f*)

V. PERICARP none. The *Corolla* closely investing the seed, nor opens. (*g*)

VI. SEEDS one, oblong, pointed at both ends. (*h*)

THE SECONDARY CHARACTERS.

I. STEM, *culm*, articulate.

II. LEAVES, gramineous, vaginant, subulate, intire.

IV. HABITATION, dry pastures, sandy soil.

Class III. *Triandria.* Order II. *Digynia.*

GENUS 55.

TRITICUM. *Wheat-grass.*

(From TERO, L. *to thresh.*—The English name is old Saxon.)

THE NATURAL CHARACTERS.

I. CALYX. A *common receptacle* elongated into a spike. *Glume* two-valved, many-flowered: (*a*) *valves* ovate, rather obtuse, concave. (*b*)

II. COROLLA two-valved, nearly equal, the size of the calyx: the *exterior valve* ventricose, obtuse with a point: (*c*) the *interior valve* flat. (*d*)

III. STAMINA. *Filaments* three, capillary. *Anthers* oblong, bifurcate.(*e*)

IV. PISTILLUM. *Germen* top-shaped. *Styles* two, capillary, reflexed. *Stigmata* feathery. (*f*)

V. PERICARP none. *Corolla* cherishes the seed, (*g*) opens and emits.(*h*)

VI SEED one, ovato-oblong, at both ends obtuse, on this side convex, on the other furrowed. (*i*)

THE SECONDARY CHARACTERS.

I. STEM, culm, articulate.

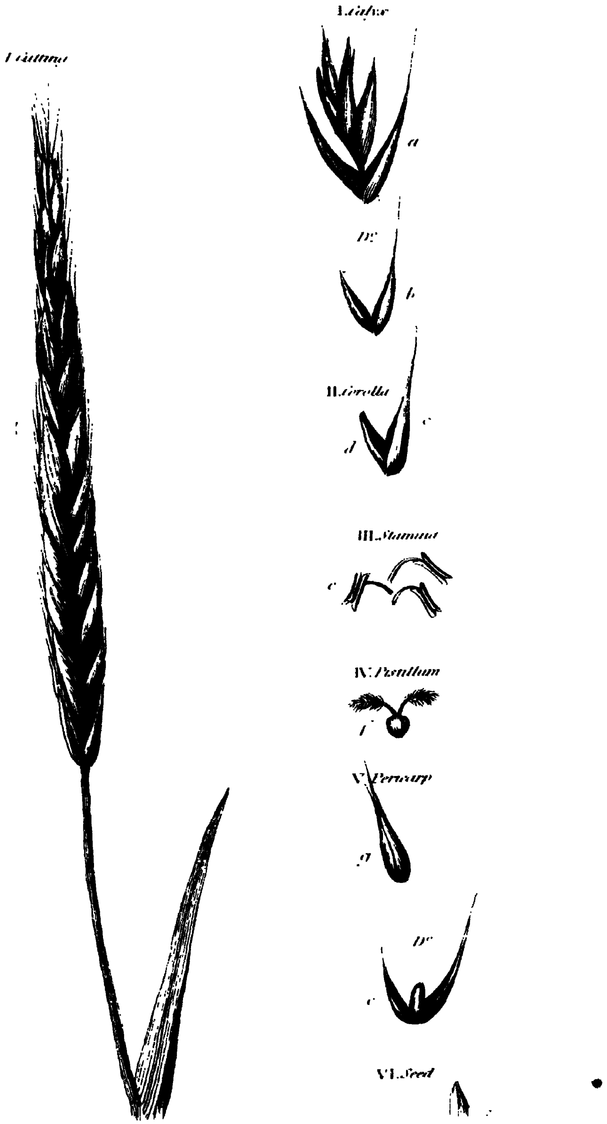
II. LEAVES gramineous, vaginant, subulate, intire.

III. FLOWERS, terminal, spiked. (*k*)

IV. HABITATION, sea-side, cultivated land, woods.

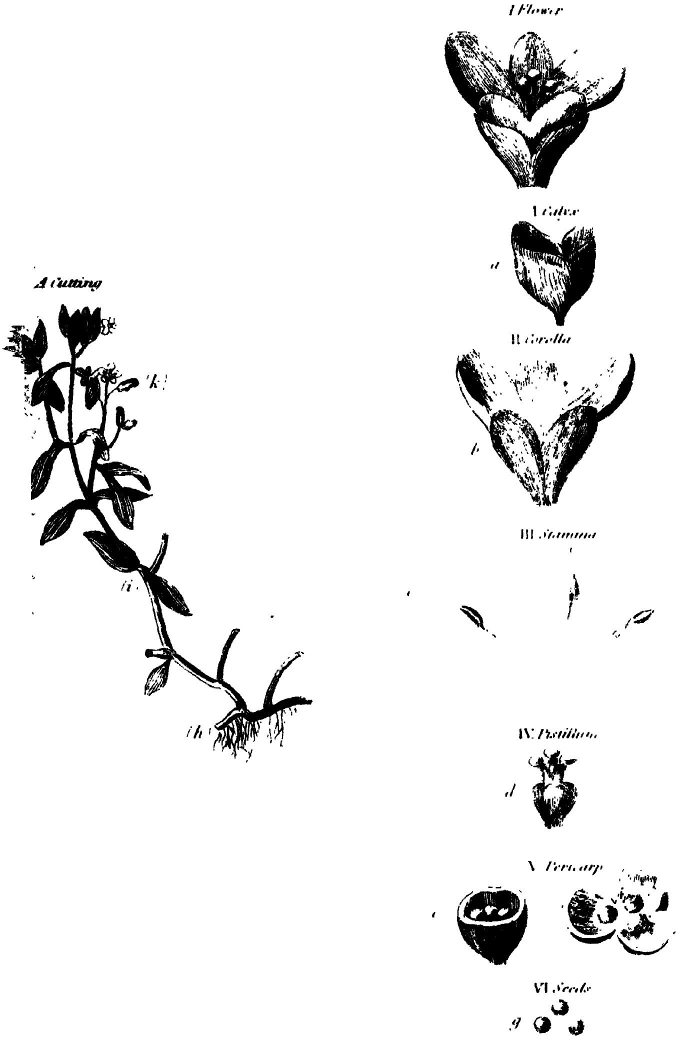
Ex. TRITICUM CANINUM.

BEARDED WHEAT-GRASS.



Ex. MONTIA FONTANA

WATER CHICKWEED.



Class III. *Triandria.* Order III. *Trigynia.*

GENUS 56.

MONTIA. *Water-chick-weed.*

(Named after Dr. Monti, professor of Botany in the university of Bologna, author of several Botanical works—the English name from growing near the *water*, and resembling *chick weed.*)

THE NATURAL CHARACTERS.

I. Calyx. *Perianth* two-leaved; *leaflets* ovate, concave, obtuse, erect. persisting. (*a*)

II. Corolla, one-petalled, five-parted: (*b*) the three alternate laciniæ less, stamen-bearing. (*c*) (*c*) (*c*)

III. Stamina. *Filaments* three, capillary, nearly length of the corolla, into which it is inserted. *Anthers* small.

IV. Pistillum. *Germen* top-shaped. *Styles* three, villous, patent. *Stigmata* simple. (*d*)

V. Pericarp. *Capsule* top-shaped, obtuse, covered, one-celled, (*e*) three-valved. (*f*)

VI. Seeds three, roundish. (*g*)

THE SECONDARY CHARACTERS.

I. Stem, herbaceous, branchy, radicant. (*h*)

II. Leaves, opposite, sessile, entire. (*i*)

III. Flowers, axillary, peduncled, aggregate (*k*)

IV. Habitation, springs and in moist meadows.

Class III. *Triandria.* Order III. *Trigynia.*

GENUS 57.

POLYCARPON. *All-seed.*

(From POLUS, Gr. *much,* and KARPOS, G. *fruit,* from its abounding in seeds.—The English name from the same circumstance.)

THE NATURAL CHARACTERS.

I. CALYX. *Perianth* five-leaved: *leaflets* ovate, persisting. (*a*)

II. COROLLA. *Petals* five, emarginate, obtuse, equal. (*b*)

III. STAMINA. *Filaments* three, filiform, shorter than the corolla. *Anthers* roundish. (*c*)

IV. PISTILLUM. *Germen* roundish. *Styles* three, filiform. *Stigmata* rather obtuse. (*d*)

V. CAPSULE ovate, one-celled, (*e*) at the apex three-valved. (*f*)

VI. SEEDS many, roundish. (*g*)

THE SECONDARY CHARACTERS.

I. STEM, herbaceous, branchy. (*h*)

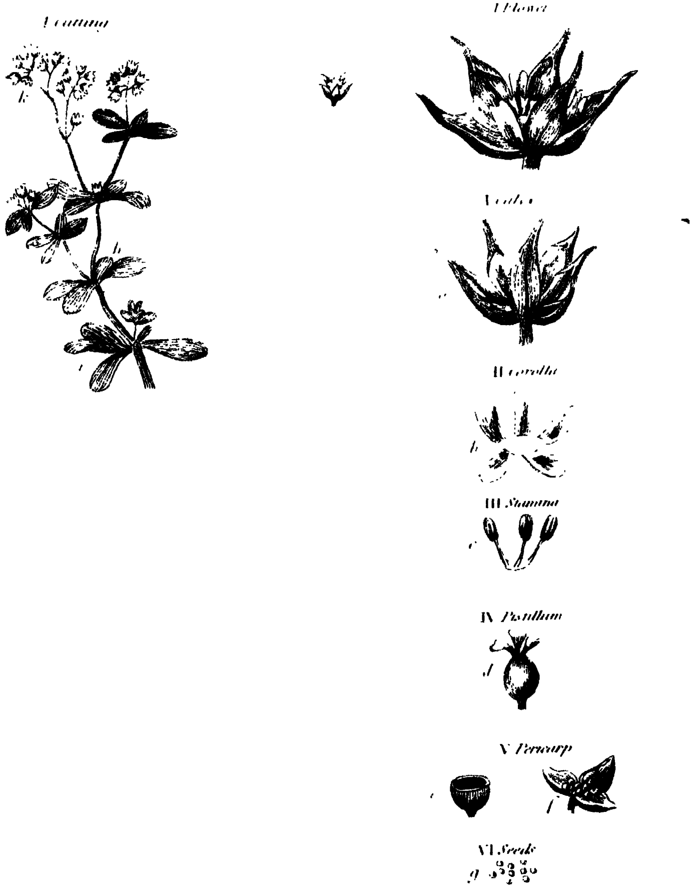
II. LEAVES, verticillate, sessile, entire. (*i*)

III. FLOWERS, terminal, paniculate, dichotomous. (*k*)

IV. HABITATION, on the coast.

EX. POLYCARPON TETRAPHYLLUM.

FOURLEAVED ALLSEED.



Class III. *Triandria.* Order IV. *Monæcia.*

GENUS 59.

BRYONIA. *Bryony.*

(From BRUO, G. *to abound,* from its numerous leaves.—No English generic name.)

THE NATURAL CHARACTERS.

MALE FLOWERS.

I. CALYX *Perianth* one-leaf, campanulate, five-toothed, teeth, subulate. (*a*) (*a*)

II. COROLLA, five-parted, campanulate, adhering to the Calyx: the laciniæ ovate. (*b*)

III. STAMINA. *Filaments* three, very short. *Anthers* five, of which two are connate upon one filament, (*c*) (*c*) a single one on the third filament. (*d*)

FEMALE FLOWERS.

I. CALYX. *Perianth* as in the male, deciduous.

II. COROLLA, as in the male.

III. PISTILLUM. Germen beneath. Style trifid, length of the corolla, patent. *Stigmata* emarginate, spreading. (*e*)

IV. PERICARP. *Berry* oval, smooth. (*f*)

V. SEEDS, some, adhering to the bark, subovate. (*g*)

THE SECONDARY CHARACTERS.

I. STEM, herbaceous, climbing, having claspers. (*h*)

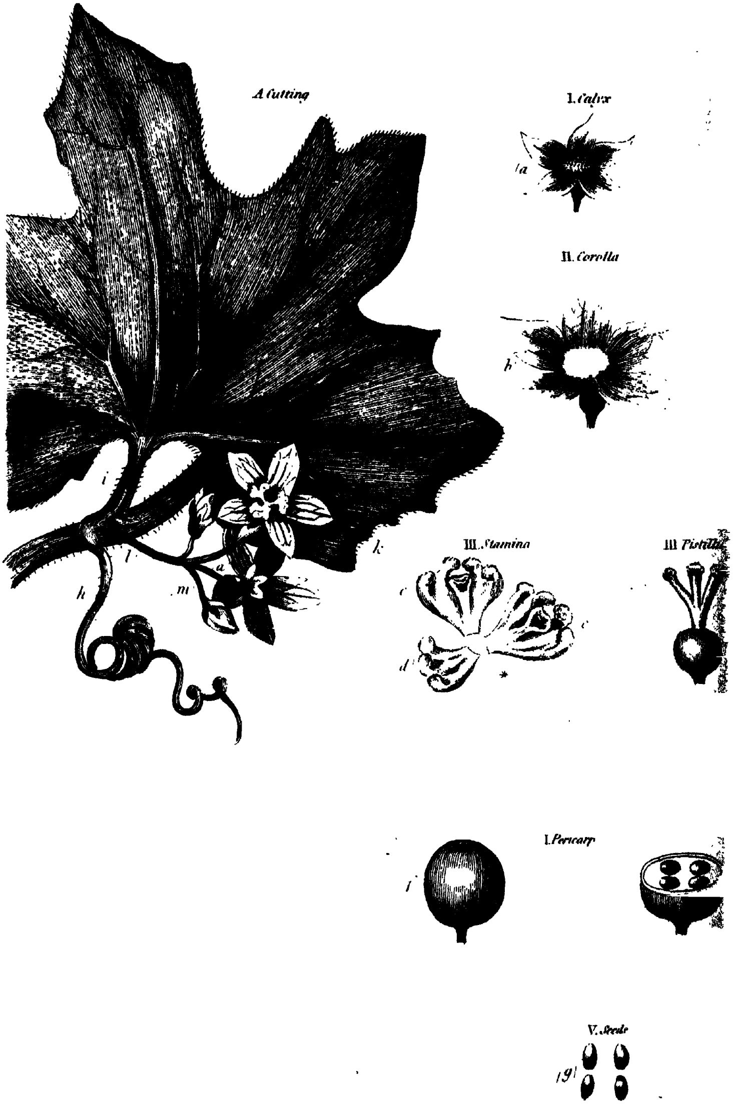
II. LEAVES, alternate, petiolate, (*i*) multifid. (*k*)

III. FLOWERS, axillary, pedunculate, (*l*) peduncles many-flowered. (*m*)

IV. HABITATION, hedges, common.

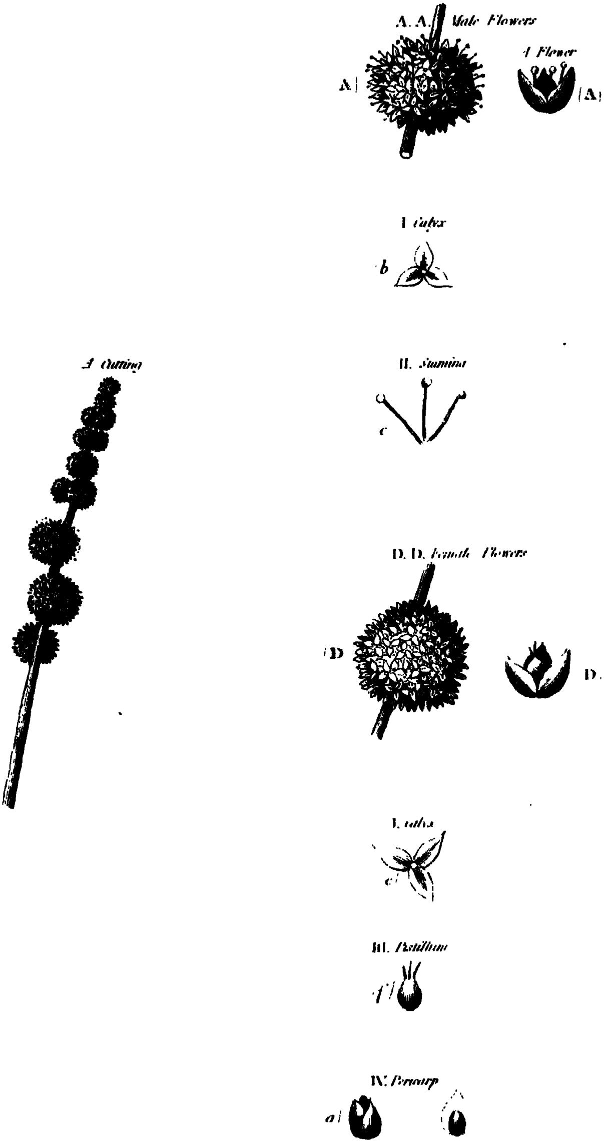
EX. BRYONIA ALBA.

WHITE BRYONY.



EX. AMARĀNTHUS BLĪTUM.

WILD AMARANTH.



Class III. *Triandria.* Order IV. *Monœcia.*

GENUS 60.

AMARANTHUS. *Amaranth.*

(From A. G. *not,* and MARAINO *to decay,* from the *permanency* of its *flowers.*—No other English generic name.)

THE NATURAL CHARACTERS.

I. MALE FLOWERS. (A) (A)

I. Calyx. *Perianth* three or five leaves, erect, coloured, persisting: *leaflets* lanceolate, acute. (*b*)

II. Corolla, none, unless you assume for such the calyx.

III. Stamina. *Filaments* three or five, capillary, erecto-patulous, length of the calyx. *Anthers* oblong, vibrating. (*c*)

II. FEMALE FLOWERS. (D) (D)

I. Calyx. *Perianth* altogether as in the male. (*e*)

II. Corolla, none.

III. Pistillum. *Germen* ovate. *Styles* three, short, subulate. *Stigmata* simple, persisting. (*f*)

IV. Pericarp. *Capsule* ovate, somewhat compressed, coloured like the calyx, upon which it rests, and of its size, three-beaked, (*g*) one-celled, cut round.

V. Seed, one, round, compressed, large. (*h*)

THE SECONDARY CHARACTERS.

I. Stem, herbaceous, striated, ramous, procumbent.

II. Leaves, alternate, petiolate, simple, entire.

III. Flowers, terminal, or axillary, glomerate, or racemous, sessile or pedunculate.

IV. Habitation, in cultivated meadows, not common.

Class III. *Triandria.* Order IV. *Monœcia.*

GENUS 61.

SPARGANIUM. *Bur-reed.*

(From SPARGANON, G. a *wreath*, its leaves being formerly used fo· that purpose.—The English name from its clustered flowers resembling a *burr*, and as being a *reed*.)

THE NATURAL CHARACTERS.

MALE FLOWER. (A)

I. **Calyx.** The common *amentum* roundish, thickly imbricated on every side, permanent, The *Proper Perianths* three-leaved, linear, deciduous. (*b*)

II. **Corolla** none.

III. **Stamina.** *Filaments* three, capillary, length of the calyx. *Anthers* oblong. (*c*)

FEMALE FLOWERS. (D)

I. **Calyx**, as in the male. A common *receptacle*, roundish. *Proper Perianths* nearly the same. (*e*)

II. **Corolla**, none.

III. **Pistillum.** *Germen* ovate, ending in a short style, subulate. *Stigmata* two, acute, persisting (*f*)

IV. **Pericarp.** A *Drupe* dry, top-shaped, with a point, beneath angular. (g)

V. **Seed,** *Nuts* two, bony, oblong-ovate, angular. (*h*)

THE SECONDARY CHARACTERS.

I. **Stem,** a culm, smooth, branchy. (*i*)

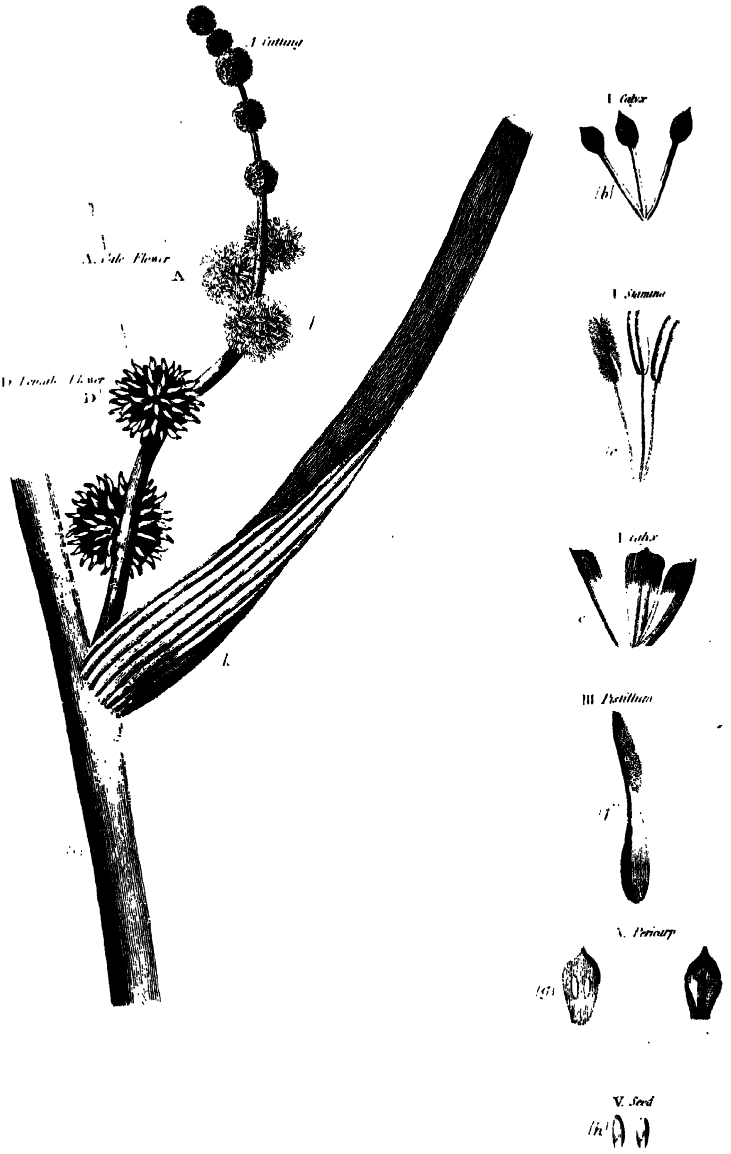
II. **Leaves,** alternate, vaginant, intire. (*k*)

III. **Flowers,** terminal, spiked, spikes solitary, mostly alternate. Flowers above, female; below, sessile, (*l*) or pedunculated, male.

IV. **Habitation,** ditches, and the banks of rivers.

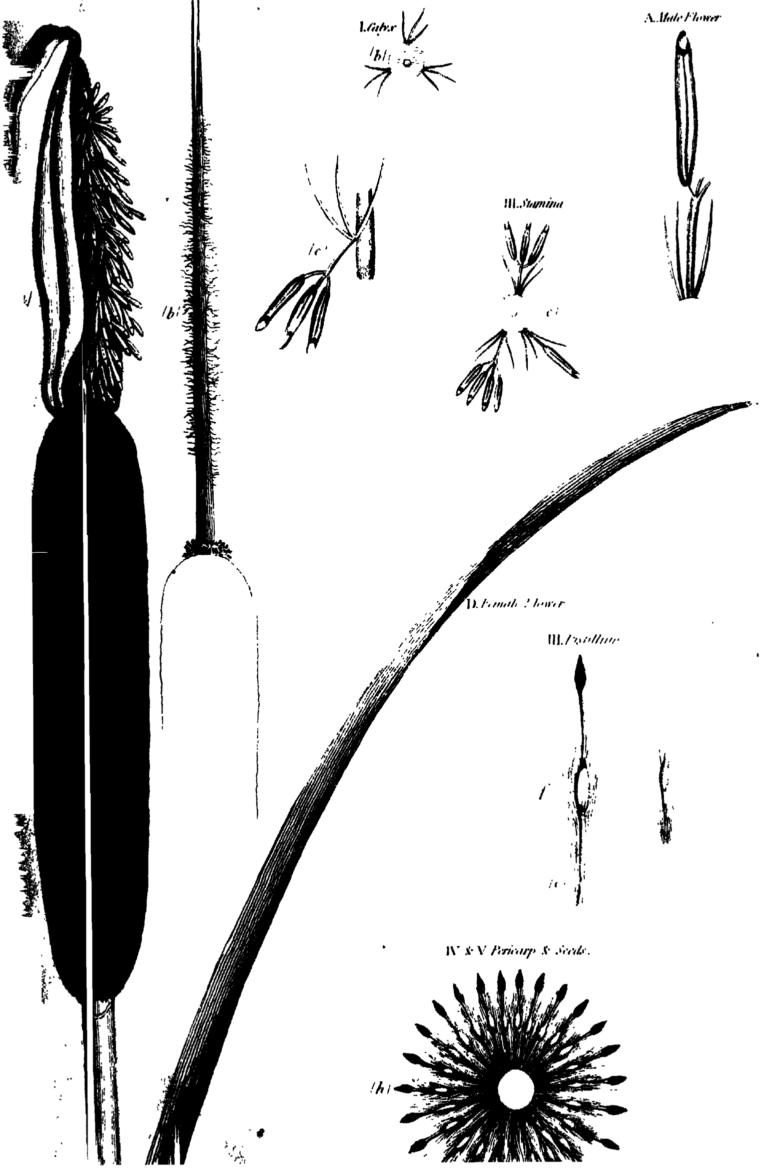
Ex. SPARGĀNIUM RAMŌSUM.

BRANCHED BUR-REED.



TYPHA LATIFOLIA.

GREAT CATS TAIL.



Class III. *Triandria.* Order IV. *Monœcia.*

GENUS 62.

TYPHA. *Cat's-tail.*

(From TIPHOS, G. *a lake,* being an inhabitant of the *waters.*—The English name from its *amentum* resembling somewhat a *cat's-tail.*)

THE NATURAL CHARACTERS.

MALE FLOWERS. (A)

I. CALYX. A common *Amentum,* cylindrical, (*b*) crowded, consisting of *Perianths proper* three-leaved, setaceous. (*c*)

II. COROLLA, none.

III. STAMINA. *Filaments* three, capillary, length of the calyx. *Anthers* oblong, pendulous. (*c*)

FEMALE FLOWERS. (D)

I. CALYX. Hairs, pappous. (*e*)

II. COROLLA, none.

III. STAMINA. *Germen* beset with setæ, ovate. *Styles* subulate. *Stigma* capillary, persisting. (*f*)

IV. PERICARP none. *Fruit* numerous, constituting a cylinder. (*g*)

V. SEED, one, ovate, furnished with a style, beset with *setæ. Pappus* capillary, as if affixed to the seed-bearing *setæ,* length of the Pistillum. (*h*)

THE SECONDARY CHARACTERS.

I. STEM, *culm,* horizontal, knotty, stoloniferous.

II. LEAVES, alternate, vaginant, intire.

III. FLOWERS, terminal, club-spiked, spikes twin, alternate,

IV. HABITATION in ponds and marshes.

Class III. *Triandria.* Order IV. *Monæcia.*

GENUS 63.

CAREX. *Sedge.*

(From KEIRO, G. *to abrade,* from its *roughness.*—The word sedge is *Saxon.*)

THE NATURAL CHARACTERS.

MALE FLOWERS. (A)

I. CALYX. An *amentum* oblong, imbricated, composed of *scales* (*b*) one-flowered, lanceolate, acute, concave, persisting.

II. COROLLA, none.

III. STAMINA. *Filaments* three, setaceous, erect, longer than the calyx. *Anthers* erect, long, linear. (*c*)

FEMALE FLOWERS. (D)

I. CALYX. An *amentum* as with the males.

II. COROLLA. *Petals* none.

Nectary inflated, ovato-oblong, at the apex bidentate, above contracted, gaping at the mouth, persisting. (*e*)

III. PISTILLUM. *Germen* triquetrous, within the Nectary. *Styles* very short. *Stigmata* three or two, subulate, incurved, long, acuminate, pubescent. (*f*)

IV. PERICARP, none. *Nectary* enlarged, cherishing the seed. (*g*)

V. SEED one, ovato-acute, triquetrous, one angle often the least. (*h*)

THE SECONDARY CHARACTERS.

I. STEM, culm, round or triquetrous. (*i*)

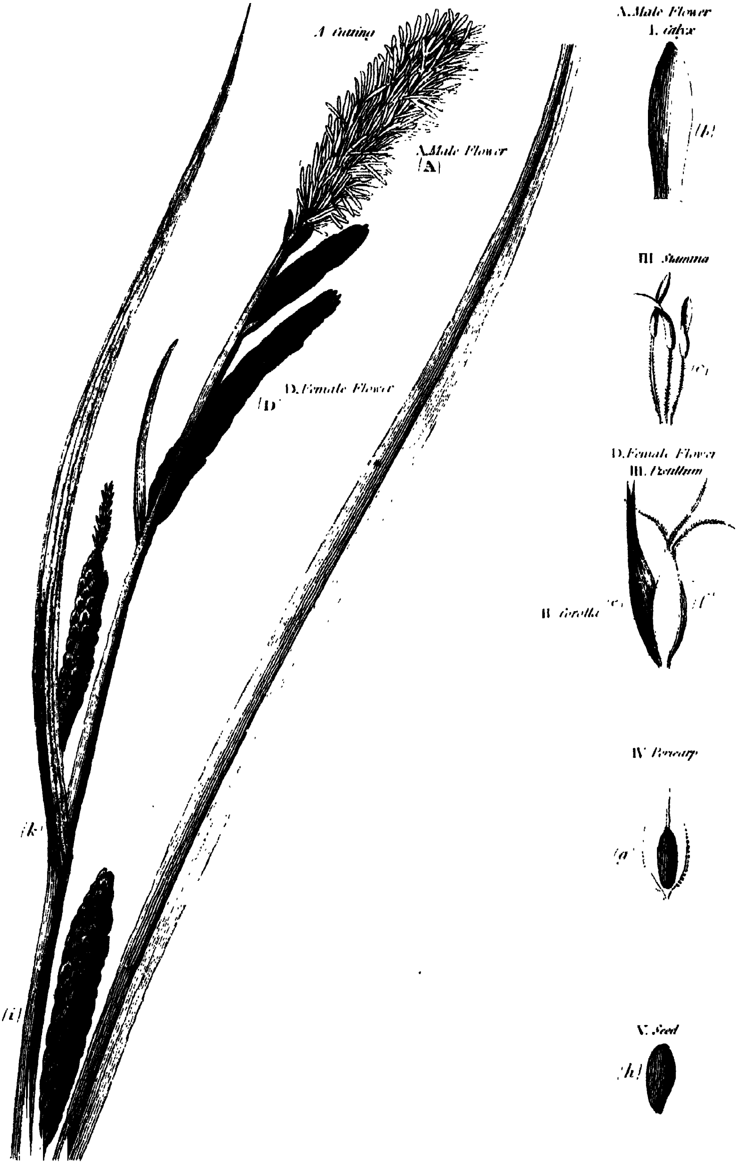
II. LEAVES, alternate, (*k*) (*k*) vaginant, intire.

III. FLOWERS, terminal, spiked, sessile, or pedunculated.

IV. HABITATION, marshes, sea-coast, woods, moist meadows, tops of mountains.

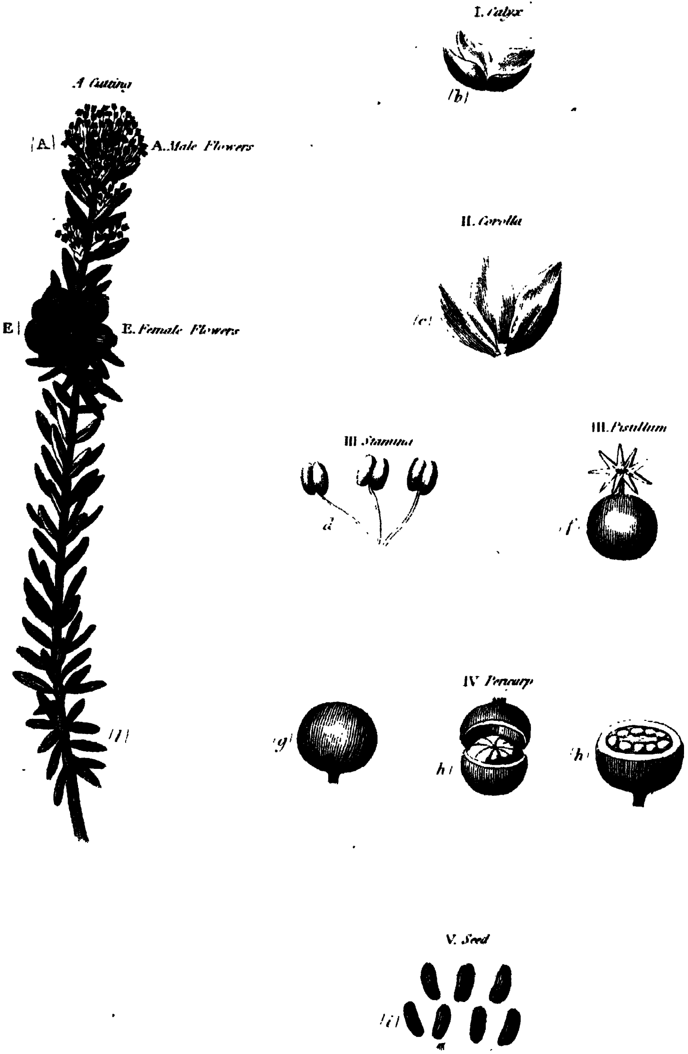
EX. CĀREX ACŪTA.

SLENDER SPIKED SEDGE.



EX. EMPETRUM NIGRUM.

BLACK CRAKE BERRIES.



Class III. *Triandria*. Order V. *Diœcia.*

GENUS 64.

EMPETRUM. *Crake-berries.*

(From EN. G. *upon*, and PETROS, G. *a rock*, because it grows upon rocks —and the English name from *crag*, a rock, and as bearing a shrub, or producing a *berry*.)

THE NATURAL CHARACTERS.

MALE FLOWER. (A)

I. CALYX. *Perianth* tripartite: laciniæ ovate, persisting. (*b*)

II. COROLLA. *Petals* three, ovato-oblong, narrower at the base, larger than the calyx, withering. (*c*)

III. STAMINA. *Filaments* three, capillary, very long, projecting. *Anthers* erect, short, bipartite. (*d*)

FEMALE FLOWER. (E)

I. CALYX. *Perianth* as in the male.

II. COROLLA. *Petals* as in the male.

III. PISTILLUM. *Germen* depressed. *Style* scarcely any. *Stigmata* nine, reflexo-patent. (*f*)

IV. PERICARP. *Berry* orbicular, depressed, (*g*) unilocular, (*h*) (*h*) larger than the calyx.

V. SEED nine, placed jointward in a circle, on this side gibbous, on the other angular. (*i*)

THE SECONDARY CHARACTERS.

I. STEM, branchy, branches erect, leafy, red. (*k*)

II. LEAVES, partially imbricate, often verticillate, revolute. (*l*)

III. FLOWERS axillary, solitary, subsessile, flesh-coloured.

IV. HABITATION, on the crags of lofty mountains.

Class III. *Triandria.* Order VI. *Polygamia.*

GENUS 65.

HOLCUS. *Soft-grass.*

(From the OLKOS, G. *a furrow*, being cultivated—and the English name because of the great *woolliness* of one of the species.)

THE NATURAL CHARACTERS.

BISSEXUAL FLOWER. (A)

I. CALYX. *Glume* mostly two-flowered, bivalved, rigid, awnless: *exterior valve* ovate, concave, large, embracing the interior, oblong, convoluted at the sides (*b*)

II. COROLLA. *Glume* bivalved, tender, villous, less than the calyx: *exterior valve* often with an arista, rigid, longer than the calyx: but with the *interior* awnless, least. (*c*) (*c*)

III. STAMINA. *Filaments* three, capillary. *Anthers* oblong. (*d*)

IV. PISTILLUM. *Germen* top-shaped. *Styles* two, capillary. *Stigmata* pencilform. (*e*)

V. PERICARP, none. *Corolla* involves, covers, adheres to the seed, (*f*)

VI. SEED one, ovate, covered. (*g*)

UNISEXUAL, A MALE, FLOWER. (H)

I. CALYX. *Glume* bivalved: *valves* ovato-lanceolate, convolute, awnless, acute. (*i*)

II. COROLLA, none, unless you call such the calyx.

III. STAMINA. *Filaments* three, capillary. *Anthers* oblong. (*k*)

THE SECONDARY CHARACTERS.

I. STEM, *culm,* articulate.

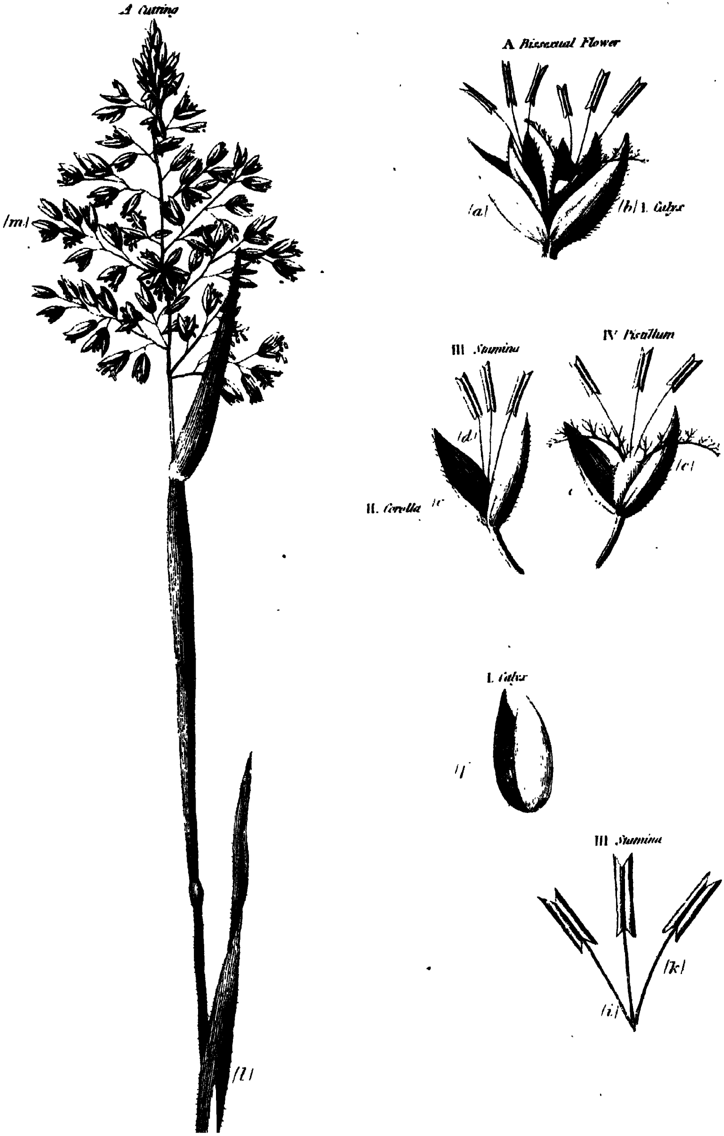
II. LEAVES, gramineous, alternate, vaginant, entire. (*l*)

III. FLOWERS, terminal, paniculate. (*m*)

IV. HABITATION, meadows, hedge sides.

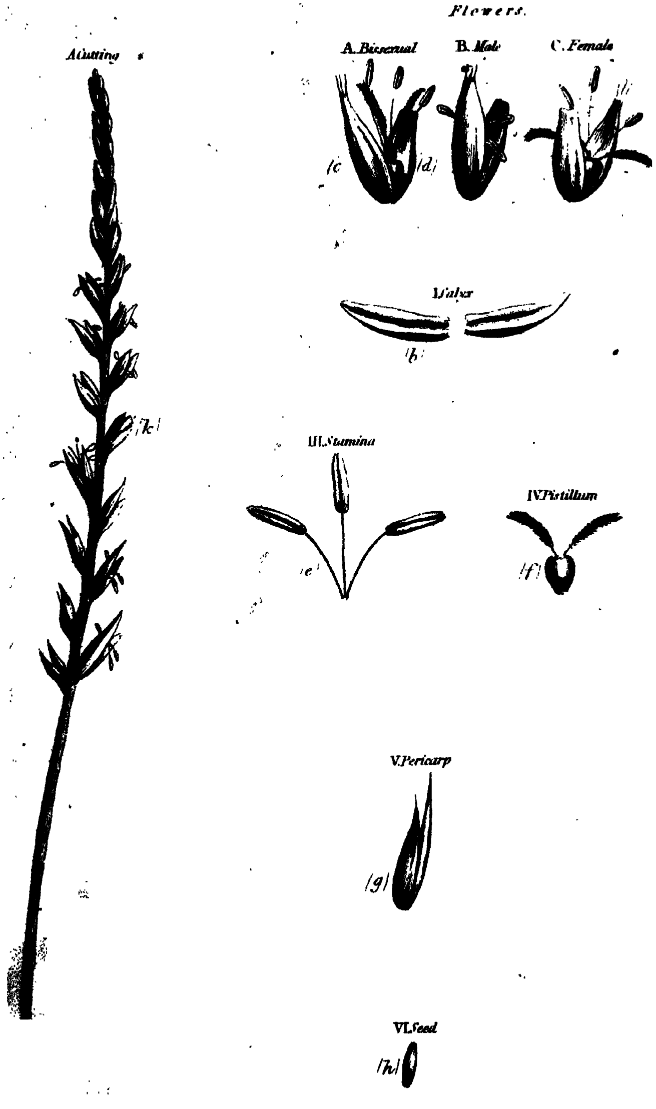
Ex. HOLCUS LANATUS

WOOLLY SOFT GRASS.



XX. ÆGILOPS INCURVATA.

SEA HARD-GRASS.



Class III. *Triandria.* Order VI. *Polygamia.*

GENUS 66.

ÆGILOPS.*

(From AIGOS, G. *of a goat.* OPS, G. *face,* from its *roughness.*—No English generic name.)

THE NATURAL CHARACTERS.

BISSEXUAL FLOWERS. (A)

I. CALYX. *Glume* bivalved, three-flowered, very large: valves ovate, truncate, striate, awns various. (*b*)

II. COROLLA. *Glume* bivalved: *exterior valve* ovate, terminated by a double or triple arista. (*c*) *Interior valve* lanceolate, erect, awnless, inflexed longitudinally at the margin. (*d*)

III. STAMINA. *Filaments* three, capillary. *Anthers* oblong. (*e*)

IV. PISTILLUM. *Germen* top-shaped. *Styles* two, reflexed. *Stigmata* pilose. (*f*)

V. PERICARP none. *Inner valve* of the *Corolla* adheres to the seed, nor opens. (*g*)

VI. SEED, oblong. (*h*)

MALE FLOSCULE. (I) (I)

I. CALYX.—II. COROLLA.—III. STAMINA.—IV. PISTILLUM, as in the bissexual flower; but the *pistillum* is almost ever abortive.

THE SECONDARY CHARACTERS.

I. STEM, a *culm,* articulate.

II. LEAVES, gramineous, alternate, vaginant, entire.

III. FLOWERS, terminal, spiked, alternate. (*k*)

IV. HABITATION, in fields and pastures near the sea.

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* This is the Rottbollia of Smith.

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